FINDING OF NO SIGNIFICANT IMPACT FOR THE DEMOLITION AND DISPOSAL OF BASE BUILDI NGS AND FACILITIES ON EDWARDS AFB, CALIFORNIA

1.0 INTRODUCTION

The 412th Civil Engineer Group (412 CEG) proposes the ongoing demolition and disposal of buildings and facilities on Edwards AFB, California. The project is needed for the following reasons: the buildings are no longer used; the buildings are in the way of new construction; the buildings pose a health and safety hazard; the buildings are uneconomical to maintain; or the buildings are obsolete in function.

This Environmental Assessment (EA) documents the analysis of the actions required to demolish buildings and facilities at Edwards AFB. The EA evaluates and addresses 143 buildings and facilities at Edwards AFB planned or proposed for demolition and disposal in the reasonably foreseeable future. This EA fulfills the requirements for compliance with the National Environmental Policy Act (NEPA), Title 40 of the Code of Federal Regulations Parts 1500-1508, and Air Force Instruction 32-7061, which are the applicable implementing regulations for NEPA.

The EA analyzes the potential environmental consequences of activities associated with the demolition, renovation and stabilization of buildings basewide. Environmental protection measures are also incorporated into the EA to reduce potential adverse environmental impacts to less than significant. Edwards AFB has considered all potential impacts of Alternative A (Proposed Action-Building Demolition), Alternative B (Building Renovation), Alternative C (Building Stabilization) and Alternative D (No Action Alternative).

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The proposed action, Alternative A, is demolishing at least 25 percent or more of a facility and removing corresponding infrastructure. Alternative B is building renovations that allow for continued support of an existing or new mission. Alternative C is building mothballing and stabilization, whereby repairs are made to correct deficiencies in an effort to slow down facility deterioration. Alternative D, the No Action Alternative, is the status quo: minor repairs will be accomplished to address safety concerns and to prevent permanent building damage and loss of resources (i.e., broken water pipes, etc.).

3.0 ENVIRONMENTAL EFFECTS

Components of the natural and manmade environment were analyzed for potentially significant impacts. Six potentially significant impact areas were identified: soil resources, biological resources, cultural resources, hazardous materials and hazardous waste, noise and health and safety.

Demolition and disposal activities would impact soil resources. Soil disturbing activities would increase the potential for soil erosion and when conducted in identified Environmental Restoration Program (ERP) sites, may pose a health and safety risk to

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workers. A Health and Safety Plan shall be required if digging is to be conducted in an ERP site. Should any unusual fumes or stained soils be encountered during demolition and disposal activities, the contractor shall contact the 412th Civil Engineer Group, Environmental Management Division (412 CEG/CEV). Compliance with mitigation measures provided in the EA shall eliminate any potentially significant impacts.

Demolition and disposal activities would impact biological resources. The desert tortoise *(Gopherus agassizii),* a Federal and State threatened species, may be adversely affected by vehicle traffic and disturbance of the ground surface surrounding structures during disposal activities. Adherence to the Biological Opinion reduces any potential adverse effects to the desert tortoise and its habitat. Roosting bats and nesting birds may be disturbed during building demolition; however, prior to demolition, presurveys would be conducted and delays in demolition activities would be implemented to ensure that roosting bats are allowed to escape and nesting birds are not disturbed until the young have fledged. Minimization measures provided for the desert tortoise, bats and birds listed in the EA would eliminate potentially significant impacts.

The project may adversely affect cultural resource districts and sites listed (or eligible for listing) in the National Register of Historic Places. Demolition and disposal activities shall be accomplished in conjunction with consultation with the State Historic Preservation Office and shall implement appropriate cultural resource mitigation to eliminate potentially significant impacts on cultural resources. All buildings designated for demolition and disposal shall be evaluated for impacts to cultural resources prior to demolition activities. For the 143 buildings specifically cited in the Edwards AFB Building Disposal Plan located in Appendix A, the Base Historic Preservation Officer (BHPO) shall be contacted regarding the internal section 106 review and resulting cultural resource requirements, if any. When cultural resource materials are uncovered during demolition activities, work will cease immediately in the area of discovery and the BHPO will be notified.

Demolition and disposal activities may disturb hazardous materials and hazardous waste including asbestos containing materials; lead-, mercury-, chromium- and other heavy metal-based paints; and polychlorinated biphenyls. Compliance with hazardous materials and hazardous waste regulations, and health and safety legislation, such as surveys, abatement plans, and health and safety plans, shall mitigate any potentially significant impacts.

The project would generate noise levels which could impair the hearing of workers. Compliance with mitigation regarding hearing protection measures provided in this EA would eliminate any potentially significant impacts.

Health and safety issues may impact worker health and safety. All work of a hazardous nature shall require the completion of a Health and Safety Plan. A permit from the California Occupational Safety and Health Administration shall be obtained for trench work 5-feet or deeper into which a person is required to descend. Compliance with health and safety regulations and mitigation provided in this EA would eliminate any potentially significant impacts.

4.0 FINDINGS

A Finding of No Significant Impact (FONSI) for the Proposed Action is made based on the absence of potentially significant impacts to the natural and manmade environment of Edwards AFB. Background information that supports the research and development of this FONSI and EA is on file at Edwards AFB and can be obtained by contacting the following:

412 TW/PA
412th Test Wing Public Affairs
Attn: Mr. Gary Hatch
305 East Popson Avenue, Building 1405
Edwards AFB CA 93524
661 277-8707
412tw.pae@us.af.mil

JAMES E. JUDKINS, NH-IV
Base Civil Engineer

26 Nov 14
Date

Final

ENVIRONMENTAL ASSESSMENT FOR DEMOLITION AND DISPOSAL OF BASE BUILDINGS AND FACILITIES ON EDWARDS AIR FORCE BASE, CALIFORNIA

November 2014

412th Civil Engineer Group
Environmental Management Division
Edwards Air Force Base, California

COVER SHEET

ENVIRONMENTAL ASSESSMENT FOR DEMOLITION AND DISPOSAL OF BASE BUILDINGS AND FACILITIES

Lead Agency: United States Air Force

Cooperating Agency: None

Proposed Action and Alternatives: The 412th Civil Engineer Group proposes the demolition and disposal of buildings, structures and associated infrastructure base wide. Facilities are demolished because they are (1) no longer used; (2) in the way of new construction; (3) hazardous, unsafe, or causing a nuisance; (4) too costly to maintain; or (5) obsolete in function. The second alternative is renovating old structures for adaptive reuse. The third alternative is to mothball and stabilize a facility, to prevent deterioration before deciding what to do with the facility. The fourth alternative is the no action alternative, which represents leaving buildings as they are and if inoperable, building new facilities on unoccupied land.

Inquiries on this document should be directed to the 412th Test Wing Public Affairs, Attn: Gary Hatch, 305 East Popson Avenue, Building 1405, Edwards Air Force Base, California 93524, (661) 277-1454 or email: gary.hatch@us.af.mil.

Designation: Environmental Assessment (EA)

Abstract: Pursuant to the *National Environmental Policy Act of 1969*, this EA has been prepared to analyze the potential environmental consequences of the proposed action with the implementation of any of the alternatives. The original EA is outdated and required further analysis regarding historical buildings. This EA provides an environmental baseline for demolishing and disposing of Edwards Air Force Base's buildings and facilities based on the existing conditions of the Base. Implementation of the Proposed Action would optimize facility operations, allow better land use and decrease health and safety concerns. However, demolishing historically significant facilities can have Cultural Resource ramifications, increased costs and additional requirements and thus, other alternatives need to be considered when determining which alternative to select. Adherence to all applicable federal, state and local laws and regulations, and Air Force instructions would ensure no significant environmental impacts would occur as a result of this project, and thus an Environmental Impact Statement is not required. This EA replaces the *Programmatic Environmental Assessment for Demolition and Disposal of Base Buildings and Facilities on Edwards Air Force Base, CA* (Air Force Flight Test Center, May 1997).

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LIST OF ACRONYMS AND ABBREVIATIONS

95 ABW	95th Air Base Wing
95 ABW/CEO	95th Air Base Wing Civil Engineer Operations Branch
412th TW	412th Test Wing
412th CEG	412th Civil Engineer Group
AB	Assembly Bill
ACES	Automated Civil Engineering System
ACHP	Advisory Council of Historic Preservation
ACM	asbestos containing material(s)
AF	Air Force
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFTC	Air Force Test Center
AFFTC	Air Force Flight Test Center
AFH	Air Force Handbook
AFI	Air Force Instruction
AFMC	Air Force Materiel Command
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AFPD	Air Force Policy Directive
AFRL	Air Force Research Laboratory
AGE	Aerospace Ground Equipment
APCD	Air Pollution Control District
APE	Area of Potential Effect
AQMD	Air Quality Management District
AVAQMD	Antelope Valley Air Quality Management District
BEE	Bioenvironmental Engineering
BHPO	Base Historic Preservation Officer
BO	Biological Opinion
C&D	construction and demolition
CAA	*Clean Air Act*
CAAA	*Clean Air Act Amendments of 1970*
CAAQS	California Ambient Air Quality Standards

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

CARB	California Air Resources Board
CCR	California Code of Regulations
CE/AOO	Civil Engineer Asbestos Operations Officer
CEO	Civil Engineer Operations Division
CEQA	*California Environmental Quality Act*
CESA	*California Endangered Species Act*
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act*
CEV/BAC	Environmental Management Base Asbestos Coordinator
CFR	Code of Federal Regulations
CH_4	methane
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CWA	*Clean Water Act*
CY	calendar year
DOD	Department of Defense
e-GGRT	electronic greenhouse gas reporting tool
E85	ethanol fuel blend
EA	Environmental Assessment
EAFB	Edwards Air Force Base
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EKAPCD	Eastern Kern Air Pollution Control District
E.O.	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Restoration Program
ESA	*Endangered Species Act*
FFA	Federal Facility Agreement
FONSI	finding of no significant impact
FO	foreign object
ft	foot
GHG	greenhouse gases
GIS	Geographic Information System

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

GWP	global warming potential
HAP	hazardous air pollutant
HI	Hazard Index
HM	hazardous material
HMMP	Hazardous Material Management Program
HUD	Department of Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
HW	hazardous waste
HWMP	*Edwards AFB Hazardous Waste Management Plan*
IAW	in accordance with
IC	inventory control
ICRMP	Integrated Cultural Resources Management Plan
IMT	Information Management Tool
INRMP	Integrated Natural Resources Management Plan
LBP	lead-based paint
LED	light emitting diode
LUC	land use control
MAJCOM	Major Command
MBTA	*Migratory Bird Treaty Act*
MDAQMD	Mojave Desert Air Quality Management District
MILCON	military construction
MMBtu/hr	million British thermal units per hour
MOA	memorandum of agreement
MRR	mandatory reporting rule
MSDS	material safety data sheet
MT	metric tons
$MTCO_2e$	metric ton of carbon dioxide equivalent
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NEPA	*National Environmental Policy Act of 1969*
NESHAP	National Emissions Standards for Hazardous Air Pollutants

LIST OF ACRONYMS AND ABBREVIATIONS (Concluded)

NHPA	*National Historic Preservation Act*
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NO_X	oxides of nitrogen
NSR	new source review
O_3	ozone
OSHA	Occupational Safety and Health Administration
OU	operable unit
PCB	polychlorinated biphenyls
PIRA	Precision Impact Range Area
PL	Public Law
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns
PM_{10}	particulate matter equal to or less than 10 microns
ppm	parts per million
QRP	Qualified Recycling Program
RACM	regulated asbestos-containing material
RCRA	*Resource Conservation and Recovery Act*
SARA	*Superfund Amendment and Reauthorization Act of 1970*
SHPO	State Historic Preservation Office
SIP	state implementation plans
SOP	standard operating procedures
sqft	square foot
STLC	soluble threshold limit concentration
SWPPP	storm water pollution prevention plan
U.S.	United States
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compounds
VIP	vapor intrusion pathway
YR	year

1.0 PURPOSE OF AND NEED FOR ACTION

The 412th Civil Engineer Group (412 CEG) proposes the demolition and disposal of buildings, structures and associated infrastructure on Edwards Air Force Base (AFB), CA. The purpose of the Proposed Action is to optimize facility-space use and reduce operating costs and square footage by eliminating facilities that have become too costly to maintain or are obsolete in function. Facilities are typically demolished because they are: (1) no longer used; (2) in the way of new construction; (3) hazardous, unsafe or causing a nuisance; (4) too costly to maintain; or (5) obsolete in function. The Automated Civil Engineering System Real Property disposal codes assigned to facilities as justification for demolition are A-Congressional commitment, B-In way of new construction, C-excess to requirements, D-Unusable, E-Uneconomical for retention and F-Other. This Environmental Assessment (EA) replaces the *Programmatic Environmental Assessment for Demolition and Disposal of Base Buildings and Facilities on Edwards Air Force Base, CA* (Air Force Flight Test Center [AFFTC], 1997).

This EA has been prepared in accordance with (IAW) the requirements of the *National Environmental Policy Act of 1969* (*NEPA*), as amended (Title 42, United States Code [U.S.C.], Section 4321 et seq.); the Council on Environmental Quality regulations for implementing *NEPA* (Title 40, Code of Federal Regulations [CFR], Sections 1500–1508); Air Force Instruction (AFI) 32-7061, the *Environmental Impact Analysis Process* (EIAP) (32 CFR, Part 989); Section 106 of the *National Historic Preservation Act*; AFI 32-7065, *Cultural Resources Management Program*; and all other applicable federal and local regulations.

1.1 Location and Scope of the Proposed Action

Edwards AFB is located in the Antelope Valley region of the western Mojave Desert in Southern California. Edwards AFB is about 100 miles northeast of Los Angeles, California on the western edge of the Mojave Desert. The base occupies an area of approximately 307,517 acres (480 square miles). Portions of the base lie within Kern, Los Angeles and San Bernardino counties (Figure 1).

Edwards AFB has approximately 2,600 facilities, with approximately 10 million square feet (sqft) of existing area. Most major buildings lie within Kern County. A few smaller buildings are located in Los Angeles and San Bernardino counties. This EA addresses real property throughout the entire Base, including, but not limited to, Main Base, North Base, South Base, Base Housing, the National Aeronautics and Space Administration (NASA), the Precision Impact Range Area (PIRA), the Air Force Research Laboratory (AFRL) and remote properties. Figure 1 shows the location of Edwards AFB proper. The Edwards AFB Building Disposal Plan was used as a guideline for the current assessment, but due to its evolving nature, this EA analyzes the effects of the plan basewide rather than focusing on specific buildings. A list of the buildings included in the Edwards AFB Building Disposal Plan and maps of their locations can be found in Appendix A (Table A-1 and Figures A1-A7).

1.2 Need for Action

Edwards AFB has a need to efficiently allocate its limited real property and non-excess land for mission critical activities per Air Force Policy Directives (AFPD) and Instructions, including

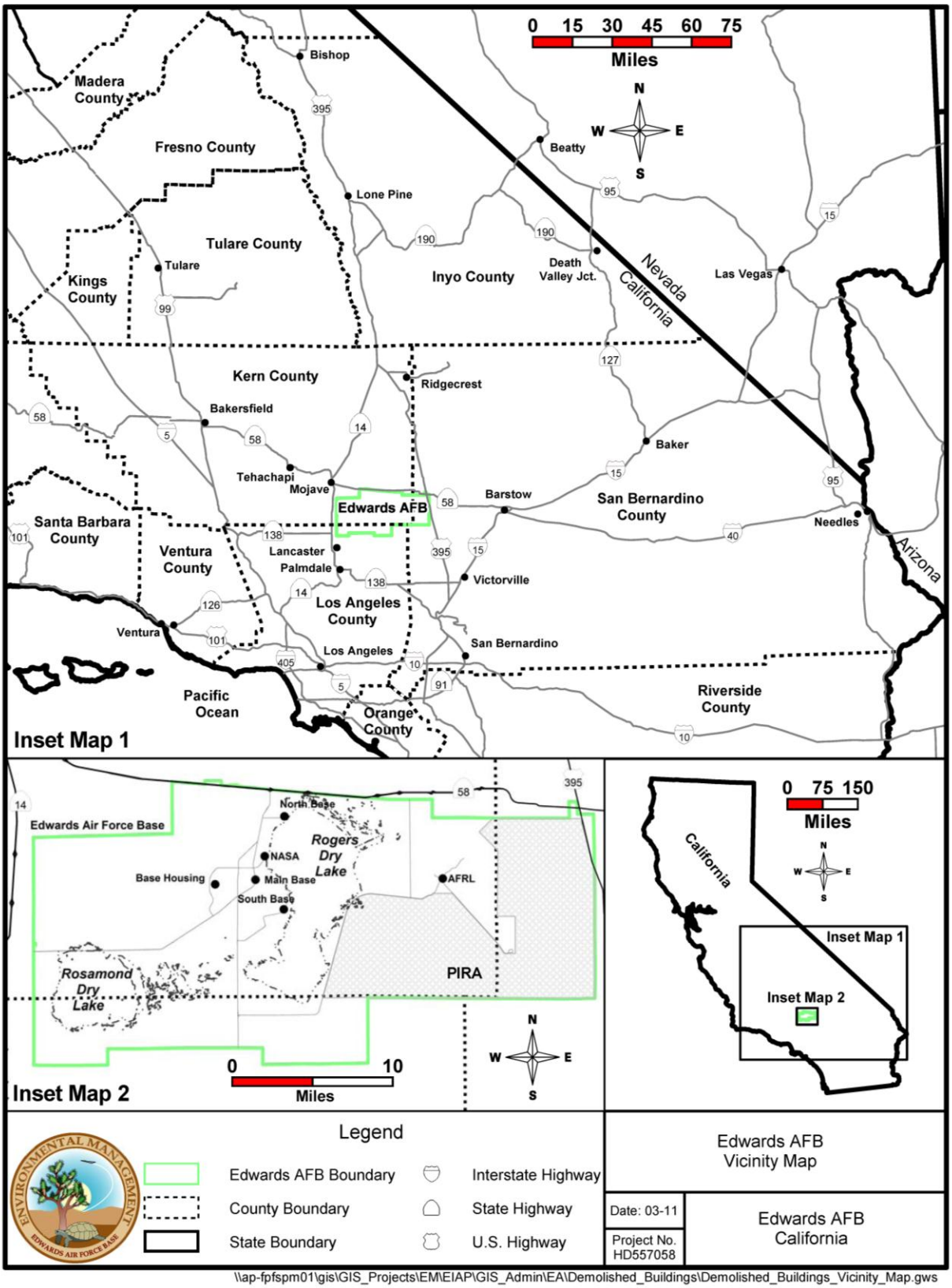

Figure 1. Location of Edwards AFB

the *2007 Defense Installations Strategic Plan*, AFI 32-9004, and Air Force Handbook [AFH] 32-9007. Edwards AFB must also reduce the square footage of its real property by 20 percent by 2020 per Air Force Materiel Command *Excess Infrastructure Guidance* (HQ USAF/A7C Memo, 29 September 2011). Thus, Edwards AFB's real property needs to be used in a manner that is most cost efficient, reduces facility square footage, is consistent with the Mission of the Base and optimizes facility space use (HQ USAF/CV Memo, 14 February 2011).

In order to comply with *NEPA* regulations and to ensure that demolition and disposal activities remain in compliance with environmental regulations, a review and evaluation of these ongoing activities are required. Addressing issues common to renovation and demolition of buildings in one EA prevents duplication of effort, eliminates repetitive discussions of the same issues and provides advance information for environmental planning. This EA identifies and documents potential environmental impacts and the environmental measures necessary to minimize the impacts associated with the proposed action and alternatives.

1.3 Issues and Concerns

During the scoping process, the alternatives were evaluated to determine the potential environmental impacts. The environmental resources that are affected include the following:

a. Land Use – Construction debris may result in foreign object damage if the project area is adjacent to the flightline; this would be a concern to aircraft operations.

b. Air Quality – Project activities would produce short-term, intermittent air quality impacts from fugitive dust (particulate matter) and, in some cases, particulate asbestos and lead. Heavy machinery and worker vehicles will emit ozone precursor compounds.

c. Water Resources – Minor impacts could occur from stormwater runoff, eroded soil and possibly hazardous waste entering the stormwater or sewage systems due to project activities.

d. Health and Safety – Demolition and disposal activities may impact the health and safety of workers and personnel and dependents in nearby locations. The noise level will be raised during project activities, especially during heavy equipment use and may be located within populated zones. Project personnel and the adjacent personnel/environment have the potential to be exposed to asbestos, heavy metals and polychlorinated biphenyls during demolition and renovation activities.

e. Hazardous Materials (HM) and Hazardous Waste (HW) – The generation, use, handling, transportation and disposal of hazardous materials and hazardous waste may occur as a result of facility demolition and disposal and renovation activities.

f. Solid Waste – Large amounts of solid waste would be generated from proposed activities and disposal at the Main Base landfill has the potential to limit its operational years. However, the Department of Defense (DoD), Air Force (AF) and the State's lead regulatory agency for solid waste, CalRecycle, have all set goals for diversion of waste from on- and off-base landfills. These agencies are holding facilities accountable for reaching these goals through reduction of waste generated, reuse of materials, and recycling.

g. Biological Resources – Potential impacts to the desert tortoise (*Gopherus agassizii*), listed as threatened under the Federal *Endangered Species Act* (*ESA*), and the Mohave ground squirrel (*Xerospermophilus mohavensis*) and their known or suspected habitat may occur as a

result of ground disturbing activities in remote areas where buildings are planned for demolition or renovation. Roosting bats may occur in abandoned buildings. Nesting birds (protected by the Migratory Bird Treaty Act) may be disturbed during building demolition or renovation activities. Plants of special concern and ecologically sensitive habitat may be disturbed based on the placement of equipment and vehicle staging areas. Increasing ground disturbance in areas not previously disturbed can/spread the occurrence of noxious weedy or invasive species, which can spread to surrounding areas and degrade habitat quality.

h. Cultural Resources – Adverse impacts to candidate buildings/structures may occur if, in consultation with the California State Historic Preservation Officer (SHPO), they are found eligible for the National Register of Historic Places (NRHP) or if the building/structure has not yet been consulted upon with the SHPO, which constitutes the vast majority of buildings on Edwards AFB. Ground disturbing activities have the potential to impact cultural resources or result in inadvertent discoveries.

i. Geology and Soils – Soil erosion may occur on disturbed sites. Project activities may disturb Environmental Restoration Program (ERP) sites, which could affect both the site remediation and building maintenance/replacement efforts.

j. Socioeconomics – Project activities will generate incremental revenues for the local economy.

k. Energy Conservation – Elimination of energy inefficient facilities will occur. Renovations will increase energy conservation when applying energy efficient design standards.

The following areas were assessed in the initial consideration of potential impacts for the alternatives and no potential significant impacts for these areas were found. Therefore, these areas are not discussed further in this EA:

a. Transportation Infrastructure – Road infrastructure and traffic volume capacity within Edwards AFB are sufficient to accommodate the additional truck equipment required to transport the debris from the proposed operational areas. Off-site, trucks would use interstate highways that are adjacent to the site and these highways are currently major truck routes. No road upgrades, new roads or new access gates would be required.

b. Environmental Justice – It was determined that conducting demolition, renovation and stabilization activities within Edwards AFB would not result in any environmental justice concerns. There is no expected change in the demographic profile of any minority group within Edwards AFB and the surrounding area. No minority or low-income population would carry undue burden of environmental risk as a result of the proposed project. Given that all demolition activities would occur on the base, the AF has determined that this action has no substantial, disproportionate impact on minority and low-income populations and/or children.

1.4 Regulatory Requirements and Permits

This EA meets the requirements of *NEPA* and the requirements of other federal, state and local environmental laws and regulations. The paragraphs below describe the regulatory requirements and permits.

A Section 106 consultation with the Advisory Council on Historic Preservation (ACHP) and/or SHPO would be necessary for activities that affect properties that have not yet been evaluated for historic significance or are listed or eligible for listing on the NRHP. Section 106 of the *National Historic Preservation Act* (Title 16 USC Section 470) details the compliance procedures required, while Section 110(b) addresses the recording of historic properties (buildings, structures, sites, districts or objects which are eligible for listing on the *NRHP*) before demolition. The Programmatic Agreement between the Edwards AFB and the SHPO provides streamlined procedures for conducting in-house Section 106 review per the *National Historic Preservation Act* (NHPA). However, because the nature of the present EA presumes demolition—which by nature constitutes an adverse effect upon buildings— Edwards AFB is obligated by the NHPA to consult with the SHPO for each and every individual undertaking, regardless of whether or not it has been found eligible for listing on the NRHP.

The United States Fish and Wildlife Service (USFWS) has issued multiple biological opinions (BOs) to Edwards AFB that contain terms and conditions to be followed for the protection of the desert tortoise under the existing-mission scenario and other alternative scenarios. Re-initiation of formal consultation with the USFWS for project activities would be required if any actions result in the following:

(1) The amount or extent of incidental take (i.e., harassment, injury, or death) allowed under the BOs are reached;

(2) New information reveals effects of the action considered under the BOs that may adversely affect listed species in a manner or to an extent not considered in the BOs; and/or,

(3) New species other than the desert tortoise are listed or new critical habitat area is designated that may be affected by routine activities.

Demolition activities would require permits from federal, state and/or local agencies. The proponent/contractor performing the work is responsible for obtaining the relevant permits and accomplishing any required notifications. Environmental permitting requirements for all work on base are coordinated through Environmental Management. The following permits would be required and as permitting requirements change, others may be required.

a. Air quality operational permits from the appropriate Air Pollution Control District (APCD) or Air Quality Management District (AQMD) would be required for powered equipment (e.g., generators, air compressors or welders) that is subject to National Emissions Standards for Hazardous Air Pollutants (NESHAP) or New Source Performance Standards requirements. Based on recent revisions to the Reciprocating Internal Combustion Engine NESHAP, all stationary generators are now subject to the regulation regardless of size – this in turn makes them subject to permitting requirements. All portable equipment and engines with manufacturer rating greater than 50 brake horsepower must either have an air permit or be registered under the California Air Resources Board Statewide Portable Equipment Registration Program. Operational air permits would be obtained prior to bringing equipment on base. If such equipment is to remain on base less than 45 calendar days, then a written exemption must be obtained from the local air agency.

b. Any required local air quality permit applications brings the local APCD in as the lead California Environmental Quality Act (CEQA) reviewer. The local APCD will perform the CEQA analysis.

c. Removal of pre-existing permitted equipment may require a permit application to generate potential emission reduction credits.

d. NESHAP notification is required by local, state and federal regulation to be submitted to the applicable Air Pollution Control District for all demolitions and for any project (demolition or renovation) disturbing regulated asbestos containing material above the *de minimis* amounts. Per the Edwards AFB Asbestos Management Plan, all NESHAP notifications are required to be submitted to Environmental Management for review and approval at least five working days prior to submitting to the regulating authority. All projects disturbing any asbestos require at least a Courtesy NESHAP notification be submitted to the applicable Air Pollution Control District [Eastern Kern Air Pollution Control District (EKAPCD), Antelope Valley Air Quality Management District (AVAQMD), Mojave Desert Air Quality Management District (MDAQMD)].

e. An AFFTC Information Management Tool (IMT) 5926, *Edwards Air Force Base Civil Engineering Work Clearance Request* (Digging Permit), is required for any trenching or digging operations that extend twelve or more inches below ground surface.

f. An AFFTC IMT 5852, *Permit for Industrial Wastewater Discharge, Edwards AFB, California,* may be required during additions to or disconnection of wastewater lines during the project activities.

1.5 Related Environmental Documents

Eight environmental documents have been approved that relate to demolishing and disposing of buildings and structures. These documents contain information used in the updating of this EA. A listing of these documents is below and should not be taken as complete, but as a summary of related environmental documents.

a. *General Plan, Edwards Air Force Base* (Base General Plan) (412 TW/CEAO, 2013);

b. *Edwards Air Force Base Design Standards* (412 TW/CE, 2013);

c. *Programmatic Environmental Assessment for Demolition and Disposal of Base Buildings and Facilities, Edwards Air Force Base, California* (AFFTC, 1997);

d. *Abbreviated Environmental Assessment for Disposal of Buildings 261, 263, and 513* (AFFTC, 1996a);

e. *Abbreviated Environmental Assessment for Disposal of Facility 3522, Weather Instrument Shelter* (AFFTC, 1996b);

f. *Abbreviated Environmental Assessment for Demolition of Structures 3517, 3518, 3740, 7991, 7992, 7994, and 7997* (AFFTC, 1995);

g. *Integrated Natural Resources Management Plan for Edwards Air Force Base, California*, Edwards AFB Plan 32-7064 (INRMP) (95 ABW, 2008);

h. *Programmatic Agreement between the United States Air Force and the California State Historic Preservation Officer Regarding Implementation of the Air Force Flight Test Center Mission and the Integrated Cultural Resources Management Plan at Edwards Air Force Base, California* (AFMC, 2009);

i. *Integrated Cultural Resources Management Plan for Edwards Air Force Base, California, Edwards AFB Plan 32-7065* (ICRMP) (95 ABW, Revised 2012);

j. *Historic Context Statement Report for Evaluation of Cold War-Era Properties on Edwards Air Force Base, California* (412 TW, 2013); and

k. *Historic Context Statement Report for Evaluation of Cold War-Era Properties on Edwards Air Force Base, California* (412 TW, 2013).

1.6 Future Use of This Document

This EA is an overall planning document that can be used as a tool to evaluate potential and cumulative environmental impacts resulting from ongoing proposed demolition/renovation and disposal activities. Future proposed actions would be evaluated to ensure that such actions fall under the level of impact discussed in this document. Future demolition and disposal projects at Edwards AFB need to be documented on an AF Form 813, *Request for Environmental Impact Analysis*. The Environmental Management Office will review and evaluate the AF Form 813. If the proposed project falls within the scope of this EA, and no new environmental impacts would result, a categorical exclusion would be prepared. A categorical exclusion could also be prepared for future actions that would result in minor impacts not discussed in this EA, if impacts could be reduced to insignificant levels through minimization. In some cases, an addendum or supplement to this EA may be required. In this case, a Finding of No Significant Impact would be required. Future actions that are found to result in significant impacts to the environment that could not be minimized to a level of insignificance would need to be addressed in an Environmental Impact Statement. In the case of cultural resources, the BHPO will make a determination of effect upon the historical property and consult with the SHPO to gain concurrence.

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2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes the proposed action and compares the alternatives in terms of their environmental impacts.

2.1 Alternative A – Demolish Facility (Proposed Action)

The proposed action includes demolishing at least 25 percent or more of a facility and removing corresponding infrastructure such as, but not limited to HVACs, toilets, block walls, cement supports, slabs, foundations, footings and cyclone fencing and supports. Adjacent structures, such as storage tanks, would also be removed. Demolition activities may include deconstruction. Deconstruction is the systematic dismantling of a facility and its fixtures, systems, furnishings, etc., to allow for their reuse or recycling to the greatest extent possible. Recycling of materials may include removal of concrete foundations, slabs, footings, etc., to a staging area to be processed for future use. Associated elements that may be removed include petroleum storage tanks, and other types of above and underground storage tanks. The project activities will include abating all asbestos containing materials (ACM) and scraping and removing any loose or peeling lead paint. Once the facility and corresponding infrastructure is removed, buried utilities and corresponding piping will be capped, removed and disposed of as solid or hazardous waste or recycled. Soil will be backfilled to existing surrounding elevation with the site, graded to 90% compaction. Fill material may be required to level the demolished sites to the original grade. The large vehicles that are typically used for these activities include excavators, backhoes, bobcats, skip loaders, front end loaders and dump trucks. There may be some removal of curbs, streets, lighting, benches or sidewalks under this alternative. All demolition debris, including shallow slabs, footings and foundations, as well as buried utilities, lines and piping, whole and broken, will be removed from the site so as to leave no foreign contaminants behind. Surrounding vegetation may be removed, including trees and corresponding irrigation systems, in order to have access to the building and carry out demolition activities.

The proposed facilities include residential, commercial, industrial and research and development structures that range in size from a 100 square feet (sqft) control entry point guard house to a 450,000 sqft hangar. The overall footprint of the project site, including removing associated utility infrastructure, staging area for equipment and the temporary debris piles from the demolition, is not expected to exceed a 50 foot (ft) buffer around the facility. "Facilities" under the inventory control (IC) code in the Automated Civil Engineering System (ACES) include:

- "A": single use facilities/buildings,
  - "X": associated utilities (heating and cooling units, fire suppression systems, etc.);
- "B": multi-use facilities/buildings,
  - "D": the secondary functions of the building
    - Example: B – Base Engineer Admin, D – Sub-shop
  - "X": associated utilities (heating and cooling units, security systems, etc.);
- "C": Land, and
- "E": Other than buildings (utility poles, utility stations, roads, etc.).

Facilities covered under this EA include inventory control codes: “A”, “B”, “D” and “X”. This includes structures other than buildings, such as meteorological towers, communication towers, water storage tanks and underground vaults. This EA will not include demolishing inventory under Codes “C” and “E”. Movable equipment, such as Aerospace Ground Equipment (AGE) equipment and stand-alone renewable energy sources, like solar farms and wind turbines, are also not included in this EA.

All waste would be transferred from the project site to an approved waste disposal facility. However, recyclables may be processed through the Base’s Qualified Recycling Program (QRP) upon coordination with the Base’s QRP manager. Recyclables and materials for reuse may also be transported off-Base for processing at a local recycler. Routes from various project sites avoid Base housing areas unless the project site is located within Base housing, in which case, the contractor will exit the housing area at the nearest exit. Prior to being transferred to an off-base landfill, the bins containing recyclables or waste are taken to the on-base landfill to obtain weigh-master tickets, and are then returned to the contractor’s yard. One of three routes will be used when transporting the demolition waste off- Base. When using the North Gate route, the waste is transported from the contractor’s yard by travelling south on Contractor Hill Road, turning east on Forbes Avenue, then north on Rosamond Boulevard and pass the North Gate to State Highway 58. When using the West Gate route, the waste is transported from the contractor’s yard south on Contractor Hill Road, turning west on Forbes Avenue, then south on Lancaster Boulevard, west on Rosamond Boulevard and through the West Gate. For the South Gate route, the waste is transported south on Contractor Hill Road from the contractor’s yard, then west on Forbes Avenue, south on Lancaster Boulevard and through the South Gate.

Because Alternative A constitutes an adverse effect, the BHPO is obligated to consult with the ACHP and/or the SHPO to determine mitigation, if any.

2.2 Alternative B – Renovate Facility [Adaptive Reuse]

Alternative B entails refurbishing a building to support the current mission use more efficiently or provide a new compatible energy efficient function other than the original design (e.g. a fire station is renovated and reused as a communication work space). Such renovations to facilities that are eligible for the NRHP would require application of the Secretary of Interior’s *Standards for the Treatment of Historic Properties*, which can be found at *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings* (Weeks and Grimmer, 1995) and http://www.nps.gov/history/hps/tps/tax/rhb/ (2010). For the purposes of these Standards, Alternative B is intended to fit within the category of Rehabilitation. "Rehabilitation is defined as the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural and cultural values," (Grimmer and Weeks, 1992). Renovation would include all types of alterations on all sizes of facilities. However, this alternative does not include core structural changes, altering the existing footprint of the facility or expanding the square footage of the facility. Each action would be evaluated to ensure that it falls under the level of impact discussed within this document. Landfills and routes used to dispose of Alternative B waste would be the same as Alternative A.

Interior renovation appropriate for this alternative includes:

- Repainting - applying APCD compliant coatings and primers;
- Repair damages to the existing interior finishes;
- Replacing in kind flooring and patching and resealing concrete floors;
- Reconfiguring space for new uses (moving cubicles, adding floor to ceiling non-bearing partition walls), but does not include modifying load-bearing walls or existing sensitive compartmented information facilities within building;
- Abating toxics (asbestos-containing material, lead-based paint, PCB's, vapor intrusion pathway (VIP) mitigation, etc.); any sampling, damage or removal of historic materials in historic facilities requires approval by the Base Historic Preservation Officer to avoid a Finding of Adverse Effect to Historic Properties;
- Upgrading the doors (automatic, secured vs. unsecured, with or without windows, etc.);
- Rehabilitating aging spaces (including repairing/replacing damaged or aged countertops, built-in cabinets, flooring, drywall, ceilings and other finish materials, etc.);
- Adding or enhancing EPA and California Air Resources Board (CARB) compliant HVAC systems to include full systems and smaller additions such as an emergency push switch and all necessary wiring to shut down all HVAC units;
- Upgrading building areas for special use (laboratories, computer equipment rooms, etc.);
- Lower interior ceiling (dropped or T-bar) to accommodate additional piping/wiring or raise ceiling for aesthetics;
- Obtaining required APCD permits prior to installing or upgrading power systems to meet increased capacity or to ensure uninterrupted power sources and necessary lighting;
- Installing break room(s) and kitchenette/kitchen(s);
- Installing or upgrading the plumbing and restrooms to meet increased capacity or relevant health and living standards (e.g., new tiles, light fixtures, wainscot, paint, floors); and
- Installing high efficiency appliances, including low-flow toilets, LED lights, solar energy systems, etc.

Exterior renovation appropriate for this alternative includes:

- Abating toxics (asbestos-containing material, lead-based paint, PCB's, etc.); any sampling, damage or removal of historic materials in historic facilities requires approval by the BHPO to avoid a Finding of Adverse Effect to Historic Properties;
- Upgrading hardware (locks, mechanisms, etc.);
- Repairing exterior doors and windows or replacing in kind, if required;
- Installing proper insulation and/or sealant to render the facility weather-tight;
- Repairing roofs (replacing tiles, patching holes), but no replacement of roofs;
- Exterior improvements with additional lines for power, water and HVAC systems within a 50 ft buffer of the associated facility;
- Optimizing existing penetrations into the facility; and,
- New penetrations into facility for installation of new windows, doors, ventilation and other utility systems for non-historical facilities, while penetrations into historic facilities

are limited to 1 sqft on the service side of the facility, with other locations and larger penetrations requiring approval by the Base Historic Preservation Officer.

These alternatives are for planning purposes only. The project proponent shall consult with the BHPO prior to any project initiatives in order to secure the BHPO's concurrence for project activities.

2.3 Alternative C – Stabilize/Mothball Facility

The following alternative's description is taken from the National Park Service Preservation Brief #31 *Mothballing Historic Buildings* (Park, 1993). Mothballing is the process of temporarily sealing a building to protect it from weather, fire and vandalism. Stabilization as part of the mothballing process includes correcting deficiencies to slow down the deterioration of the facility while it is vacant, in order to keep it as functional as possible. Thorough planning is required to guarantee all physical repairs are made prior to securing the facility. Long-term success will depend on continued, although somewhat limited, monitoring and maintenance. The stabilize/mothball alternative includes:

Preparing a condition assessment of the facility and evaluating the age and condition of the following major elements: foundations; structural systems; exterior materials; roofs and gutters; exterior porches and steps; interior finishes; staircases; plumbing, electrical and mechanical systems; special features such as chimneys; and site drainage. Careful planning is crucial to ensure the needed physical repairs are made prior to securing the building.

Stabilization

- Structurally stabilize the facility, based on the professional condition assessment. Weakened structural members, including, but not limited to the roof, ceilings, staircases, structural piers that might fail in the forthcoming years will be braced or reinforced.
- Exterminate or control pests, including termites and rodents and discourage them from returning by sealing off their access to the facility.
- Protect the exterior from moisture penetration by various methods and materials. Leaks from deteriorated or damaged roofing, from around windows and doors or through deteriorated materials, as well as ground moisture from improper site run-off or rising dampness at foundations will be repaired or patched. Any other serious deficiencies on the exterior identified in the condition assessment will also be repaired.

Mothballing

- Secure the facility and its component features from sudden loss, including catastrophic destruction from fire or lightning. Install, upgrade or repair monitoring or alarm devices to notify the fire and security departments of a problem.
- Provide adequate ventilation to the interior to prevent mold, rot and insect infestation.
- Secure or modify utilities and mechanical systems. The systems that will not cause a fire hazard will remain in working condition to protect the property. The gas lines will be shut off and the sewage systems will be capped or filled with glycol to prevent explosion.

- Develop and implement a monitoring and maintenance plan for protection. Also, the Fire Department and Security Forces will be notified the property is vacant and conduct a walk-through visit.

In a few limited cases when the vacant facility is in good condition and in a location where it can be watched and checked regularly, the facility manager will close and lock the door(s), set heat levels at just above freezing and secure the windows to provide sufficient protection for a period of a few years. Landfills and routes used to dispose of Alternative C waste would be the same as Alternative A.

2.4 Alternative D – No Action Alternative

The "no action" for ongoing projects is "no change" from current management direction or level of management intensity for buildings on the demolition list. Therefore, the "no action" alternative may be thought of in terms of continuing with the present course of action. There is a range of present management actions taking place on Edwards AFB. When a facility is occupied and on the demolition list, only minor repairs to ensure personnel's safety are completed. No significant renovations occur, because the costs of these repairs outweigh the cost of relocating personnel into an existing, good-condition facility or building a new facility. When a facility is vacant and on the demolition list, the facility is either monitored or left unattended until funding is available for demolition. The buildings that are maintained have facility managers that conduct periodic inspections and request necessary repairs to prevent permanent damage. For example, a facility manager will request a repair of a broken water pipe to prevent wasting hundreds of gallons of water, possibly flooding the building and harming the foundation. A facility that is left unmonitored may or may not be locked up and usually the power is shut off. Any waste generated by repairs will be disposed of by using the same landfills and routes as described in Alternative A.

2.5 Criteria for Selection of a Reasonable Range of Alternatives

This section establishes a range of selection criteria that enhance the alternatives viability. Each alternative should meet one or more of these selection criteria and must address the underlying need stated above.

The following criteria were used to select the alternatives discussed in this document:

a. Operations/Technical

(1) Provide, operate, maintain, restore and protect the built and natural infrastructure necessary to support the AF mission (AFPD 32-10, p. 3);

(2) Increasing efficient use of space, either real property or land (AFPD 32-90, AFI 32-1021, AFI32-9004, p. 6);

(3) Equal square footage rule: A building must be removed/disposed of once the Congress designates a site for military construction and replacement facilities are available (AFH 32-9007, AFI-32-1021, AFI 32-9004);

(4) 75% Rule: If a building renovation costs 75 percent or more of what it would cost to replace the entire building, then the building should be replaced. If proposed repairs exceed

75 percent of a facility's replacement cost, an economic analysis must document that repair is more cost effective than constructing a new facility. Major Command (MAJCOM) Civil Engineers must approve requests to perform facility repairs which exceed 75 percent of the facility's replacement cost. In no case shall the cost of facility repairs exceed the replacement cost of the facility. **This is a matter of *policy* and will not apply where a facility is being repaired in lieu of replacement because it is on the national or state historic register** (AFI 32-1032, Section 5.1.2.3.2). When other factors dictate retention and restoration of the existing building (e.g., in the case of a building on the National Register of Historic Places), such repair-type work is referred to as rehabilitation and is programmed as construction class work (AFI 32-1021, Section 4.2.1);

(5) Improve work conditions by eliminating the health hazards to people, the likelihood of damage to adjoining structures and/or preventing nuisance (AFI 32-9004, p. 6);

(6) Consider energy efficiency to the maximum extent possible in all construction and repair projects (AFI 32-1032, Section 6.7); and

(7) Incorporate sustainable design principles consistent with current AF sustainable development policy to the maximum extent possible, consistent with budget and mission constraints (AFI 32-1032, Section 6.11).

b. Environment

(1) Consider the historical significance of the building and have a well-defined Area of Potential Effect (APE) IAW Section 106 of the *National Historic Preservation Act of 1966* (*NHPA*);

(2) Establish and implement alternatives to demolition of historic buildings and structures by considering adaptive re-use [Renovation], mothballing, transfer, sale or lease IAW AFI 32-7065, *Cultural Resources Management Program*, 1 June 2004;

(3) Consider existing ERP land use controls (LUCs) and potential VIP issues related to existing soil and/or groundwater contamination IAW the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (*CERCLA*);

(4) Avoid impacts to the desert tortoise (*Gopherus agassizii*) and minimize disturbance to undisturbed habitat IAW the *Endangered Species Act* (*ESA*); and

(5) Comply with applicable federal, state and local environmental laws and regulations and Department of Defense and AF directives (AFPD 32-90, Section 8).

c. Economic

(1) Ensure existing facilities are managed economically and efficiently (AFI 32-1021);

(2) Provide and retain the minimum number of facilities necessary to effectively support AF missions and people at the lowest life-cycle cost and in a sustainable way (AFPD 32-10, p.2);

(3) Requires more than normal maintenance and its disposal will not create a deficiency (AFI 32-9004, p. 6);

(4) Deterioration beyond the point of economical repair (AFI 32-9004, p. 6); and

(6) Design is obsolete and it cannot be reasonably altered or economically used (AFI 32-9004, p. 6).

2.6 Alternatives Considered but Dismissed from Further Consideration

The alternative to provide unused, excess facilities to the homeless was eliminated. Title V of the *Stewart McKinney Homeless Assistance Act*, 42 USC 11411 et seq., provides that suitable Federal properties categorized as underutilized, unutilized, excess or surplus may be made available to assist the homeless. The act requires the Department of Housing and Urban Development (HUD) review all above-categorized properties and determine whether they are suitable for the homeless. The Real Property Office submits facilities from the Building Disposal Plan to HUD. HUD publishes a Federal Register listing if the facilities are suitable. In the history of Edwards AFB, no facility on the base has been deemed suitable and available as living arrangements for the homeless. The reasons these facilities are unusable, as provided by HUD, are 'extensive deterioration' and 'within a runway clear zone.' The dominant reason is that Edwards AFB is a secured base, so homeless people cannot have access to these facilities.

2.7 Comparison Summary of Alternatives

Table 1 provides a summary of the project action and the alternatives. Table 2 illustrates a comparison of the environmental impacts resulting from each of the four alternatives. This table was constructed using broad, basewide impacts and is subsequently general in its assessment of the impacts. The EIAP analysis for each individual project will identify the extent and severity of the localized impacts in each resource area and an individual environmental review checklist will be provided for each. Even so, the impacts are not expected to be significant and minimization measures are listed to further reduce impacts.

Table 1. Summary of the Proposed Action and Alternatives

Alternatives	A: Demolish Facility (Proposed Action)	B: Renovate Facility [Adaptive Reuse]	C: Stabilize/Mothball Facility	D: No Action Alternative
Project Description	Abate, as needed, demolish and dispose of facilities on Building Disposal Plan. Grade area to existing elevation and re-vegetate to prevent erosion.	Refurbish facility, interior and exterior, for altered or more efficient use (repair roof, floor, repaint, etc.) and abate, as needed. No change to square footage or load-bearing walls.	Seal building temporarily, guarding it from weather, fire and vandals, and reduce deterioration. Ensure asbestos and lead are monitored stabilized and secured.	Demolition would not occur and current conditions would remain. New facilities would occur on undeveloped sites.
Project Location	Basewide			

Table 2. Comparison of Environmental Impacts for the Proposed Action and Alternatives

Environmental Impacts	A: Demolish Facility (Proposed Action)	B: Renovate Facility [Adaptive Reuse]	C: Stabilize/Mothball Facility	D: No Action Alternative
LAND USE				
Foreign Objects (FO)	Impacts: Minor if near flightline, none if not.	Impacts: Similar if perform exterior repairs near flightline, but less than Alternative A.	Impacts: Similar to Alternative A if perform exterior repairs, but less than Alternative A.	Impacts: Possible FO damage from deteriorating facility.

Table 2. Comparison of Environmental Impacts for the Proposed Action and Alternatives (Continued)

Environmental Impacts	A: Demolish Facility (Proposed Action)	B: Renovate Facility [Adaptive Reuse]	C: Stabilize/Mothball Facility	D: No Action Alternative
LAND USE (Concluded)				
Noise	Impacts: Short-term increase in noise hazards; Noisiest phase is heavy equipment use or near flightline; Areas of exposure must be noted.	Impacts: Possible noise hazards, although significantly less duration than Alternative A.	Impacts: Similar to Alternative A for exterior repairs.	Impacts: No change from the existing environment.
AIR QUALITY				
Baseline Air Quality/General Conformity	Impacts: Low air emissions over a long duration. Emission estimates for demolishing all facilities on 5-Yr List are 13 ton/yr NO_X, 1.4 ton/yr VOC, and 42 PM_{10}. The highest annual emissions are 9 ton/yr NO_X, 1 ton/yr VOC and 30 PM_{10}, which is *de minimis*.	Impacts: Minimal painting will emit VOCs, but not a significant amount. Very limited earthwork activity if need to repair utilities, emitting minimal air emissions.	Impacts: Similar to Alternative B, but reduced.	Impacts: No change from the existing environment.
WATER RESOURCES				
Stormwater Runoff	Impacts: Minor due to small amounts of water used to control dust emissions.	Impacts: None.	Impacts: None.	Impacts: None.

Table 2. Comparison of Environmental Impacts for the Proposed Action and Alternatives (Continued)

Environmental Impacts	A: Demolish Facility (Proposed Action)	B: Renovate Facility [Adaptive Reuse]	C: Stabilize/Mothball Facility	D: No Action Alternative
HEALTH AND SAFETY				
Chemical Hazards Lead, Asbestos, Heavy Metals, Polychlorinated Biphenyls, Volatile Organic Compounds (via the VIP)	Impacts: Chemical hazards may be present in facilities and will be abated.	Impacts: Similar impacts to Alternative A.	Impacts: If abatement is required, impacts would be similar to those in Alternative A.	Impacts: Unsecured vacant buildings pose a health hazard, if unauthorized persons enter a facility that has chemical hazards, since hazardous dusts and fibers can be released.
HAZARDOUS MATERIALS AND HAZARDOUS WASTE				
Hazardous Materials and Hazardous Waste	Impacts: The amount & type of HM used & HW created would resemble those already managed IAW relevant laws & regulations.	Impacts: Similar to Alternative A.	Impacts: Similar to Alternative B, but to a lesser degree.	Impacts: Similar to Alternative B, but to a lesser degree than Alternative C.
SOLID WASTE				
Solid Waste	Impacts: Solid waste will be generated, but disposed of properly; Deconstruction, reuse and recycling will minimize solid waste disposal.	Impacts: Similar to Alternative A, but to a lesser extent.	Impacts: Similar to Alternative A, but greatly reduced.	Impacts: If minor repairs performed, minimal amounts of solid waste may be generated.

Table 2. Comparison of Environmental Impacts for the Proposed Action and Alternatives (Continued)

Environmental Impacts	A: Demolish Facility (Proposed Action)	B: Renovate Facility [Adaptive Reuse]	C: Stabilize/Mothball Facility	D: No Action Alternative
BIOLOGICAL RESOURCES				
Effects to biological/natural resources	Impacts: The impacts to plant and animal species are minimal due to presence/ absence surveys, season of demolition and avoidance measures.	Impacts: Similar to Alternative A if exterior repairs are required. No impacts expected for interior renovations.	Impacts: Similar to Alternative A, but to a lesser extent for exterior repairs/sealing. No impacts expected for interior renovations.	Impacts: Impacts substantially less than Alternative C.
CULTURAL RESOURCES				
Effects to cultural resources	Impacts: Potential for adverse impacts to historic properties.	Impacts: Potential for adverse impacts to historic properties. Minimize by use of the Secretary of Interiors' Standards and Guidelines.	Impacts: Potential for adverse impacts to historic properties. Minimize by use of the Secretary of Interiors' Standards and Guidelines.	Impacts: Potential for adverse impacts to historic properties.
GEOLOGY AND SOILS				
Fill Material	Impacts: Fill material shall be obtained from approved borrow sites; no impacts are anticipated.	Impacts: Similar to Alternative A for ground disturbing activities, but to a lesser degree.	Impacts: Similar to Alternative A for ground disturbing activities, but to a lesser degree.	Impacts: No change from the existing environment.
Environmental Restoration Program (ERP)	Impacts: Facility may be located on ERP site with ERP equipment, pipelines and wells that must be avoided.	Impacts: May come into contact with ERP equipment, so limited impact.	Impacts: Similar to Alternative B, to a lesser degree.	Impacts: No change from the existing environment.

Table 2. Comparison of Environmental Impacts for the Proposed Action and Alternatives (Concluded)

Environmental Impacts	A: Demolish Facility (Proposed Action)	B: Renovate Facility [Adaptive Reuse]	C: Stabilize/Mothball Facility	D: No Action Alternative
SOCIOECONOMICS				
	Impacts: Beneficial through purchase of labor, materials and transportation to dispose of material, increasing local revenue.	Impacts: Benefits similar to Alternative A, but to a lesser degree.	Impacts: Benefits similar to Alternative A, but to a lesser degree.	Impacts: No change.
ENERGY CONSERVATION				
Energy Efficiency and Conservation	Impacts: Energy saved by demolishing inefficient buildings, although requires energy to demolish.	Impacts: Highest positive impact if comply with energy efficient design standards when renovating.	Impacts: Minimal impacts because reduced energy to maintain facilities ambient temperature.	Impacts: Most negative impacts by continuing the use of inefficient facilities or by the use of utilities in vacant facilities.

3.0 AFFECTED ENVIRONMENT

This section describes the relevant resources at Edwards AFB that may be affected by the proposed action and alternatives as described in Section 2.0.

3.1 Air Installation Compatible Use Zone/Land Use

Land use at Edwards AFB is designated according to the predominant function of a given area. Land may be used for a variety of purposes, including residential, industrial, commercial, agricultural, recreational and military. The Base General Plan (412 TW/CEAO, 2013) lays out the long-range development at Edwards AFB. This Plan establishes the goals, policies, plans and anticipated actions regarding the physical, social and economic environments of the base. In addition, the Edwards AFB Planning and Zoning Committee grants final siting approval for all renovation, demolition and activity-related projects as part of the review and approval process. Land use may be restricted in the vicinity of ERP sites by LUCs as documented in applicable *CERCLA* decision documents.

Edwards AFB consists of approximately 307,517 acres in Kern, Los Angeles and San Bernardino Counties. The base contains largely undeveloped or semi-improved land that is used to support the flight testing of a wide variety of military, civilian and experimental aircraft. The developed portion of the base includes approximately six percent of the total base area and is concentrated on the west side of Rogers Dry Lake.

Project activities near and adjacent to the flightline areas have the potential to generate surface debris referred to as foreign objects (FO). The FO are of concern near aircraft flight operations since the intake of objects or debris into aircraft engines could adversely impact maintenance costs and increase the safety risk to aircraft operations and field personnel working on the runway and taxiway.

Noise can be disruptive during normal activities for base personnel. Noise can cause hearing loss, temporary and permanent; communication and sleep interference; inability to perform tasks; and possible stress reactions. The location, duration, timing and frequency of activity give rise to a pattern of noise. Noise at Edwards AFB is created by aircraft, maintenance activities, logistical activities, large transportation vehicular traffic and personnel vehicular transportation. The loudness is measured in units called decibels. Hazardous noise exposure occurs when workers are present in areas where ambient noise levels exceed 85 decibels. Certain land uses, facilities and the people associated with them are more sensitive to a given level of noise than others. Such "sensitive individuals" on Edwards AFB are located in areas that include schools, churches, residential neighborhoods and medical facilities. Hearing protection for AF personnel and AF civilians is enforced by Bioenvironmental Engineering IAW AFOSH Standard 48-20.

3.2 Air Quality

3.2.1 Overview

To protect public health and welfare, air emissions from stationary and mobile sources are regulated under the *Clean Air Act* (*CAA*) and the 1990 *Clean Air Act Amendments* (*CAAA*).

Stationary sources typically include test facilities at the AFRL and boilers and generators throughout the base. Mobile sources include, but are not limited to, motor vehicles, construction equipment, aircraft and AGE. State and local agencies have the primary responsibility to prevent and control air pollution.

Within the State of California, the authority to regulate mobile sources of air emissions resides with the California Air Resources Board (CARB). The authority to regulate stationary sources of air emissions is delegated by the U.S. Environmental Protection Agency (EPA) to local air pollution control districts and air quality management districts, with state oversight provided by the CARB. Edwards AFB is located within the jurisdiction of three local air districts: the Eastern Kern Air Pollution Control District (EKAPCD), the Mojave Desert Air Quality Management District (MDAQMD) and the Antelope Valley Air Quality Management District (AVAQMD) (Figure 2). (**Note**: All other criteria pollutants are either in attainment or unclassified for each district, so are not listed in the purple boxes).

3.2.2 National and State Ambient Air Quality Standards

The significance of pollutant concentration is determined by comparing ambient measured concentration levels to the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). The standards represent the maximum allowable atmospheric concentrations that may occur, while ensuring protection to public respiratory health and welfare, under reasonable margins of safety.

Under the NAAQS, the U.S. EPA has developed standards for six criteria pollutants: ozone, fine particulate matter equal to or less than 2.5 microns and 10 microns ($PM_{2.5}$ and PM_{10}), carbon monoxide, nitrogen dioxide, sulfur dioxide and lead. In addition, volatile organic compounds and nitrogen oxides are classified as ozone precursor pollutants and are subject to further regulations. The CARB has developed similar standards based on CAAQS for the same six criteria pollutants in addition to visibility-reducing particles, sulfates, hydrogen sulfide and vinyl chloride.

While the EPA sets national standards for air quality in the form of NAAQS, California law authorizes the ARB to set ambient (outdoor) air pollution standards (California Health & Safety Code, Section 39606) in consideration of public health, safety and welfare. The CAAA recognized that states should take the lead on protecting air quality at the local level because pollution control problems typically require knowledge of local conditions, industry and geography. The state-specific standards may be more stringent than EPA standards, but cannot be less stringent and are enforceable under federal law once approved by EPA. Table 3 presents the NAAQS and CAAQS.

The CARB and U.S. EPA track air quality on an ongoing basis and classify areas or basins as either attainment or nonattainment, based on the concentration of criteria pollutants. If standards for criteria pollutants are met in a particular area, the area is designated as attainment. Once an area is classified as nonattainment, the degree of nonattainment is divided into categories of marginal, moderate, serious, severe or extreme. Areas are designated as unclassified when standards have not been established or when there is a lack of monitoring data for criteria pollutants. Unclassified areas are treated as attainment areas until proven otherwise. Please see Figure 2 for the current classifications for each criteria pollutant in each district.

Table 3. Current NAAQS and CAAAS (CARB, Version 6/7/2012)

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)	24 Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15 µg/m³		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
Nitrogen Dioxide (NO_2)[8]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[9]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Flouresecence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[9]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[9]	—	
Lead[10,11]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[11]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m³		
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used, but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

9. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

   Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

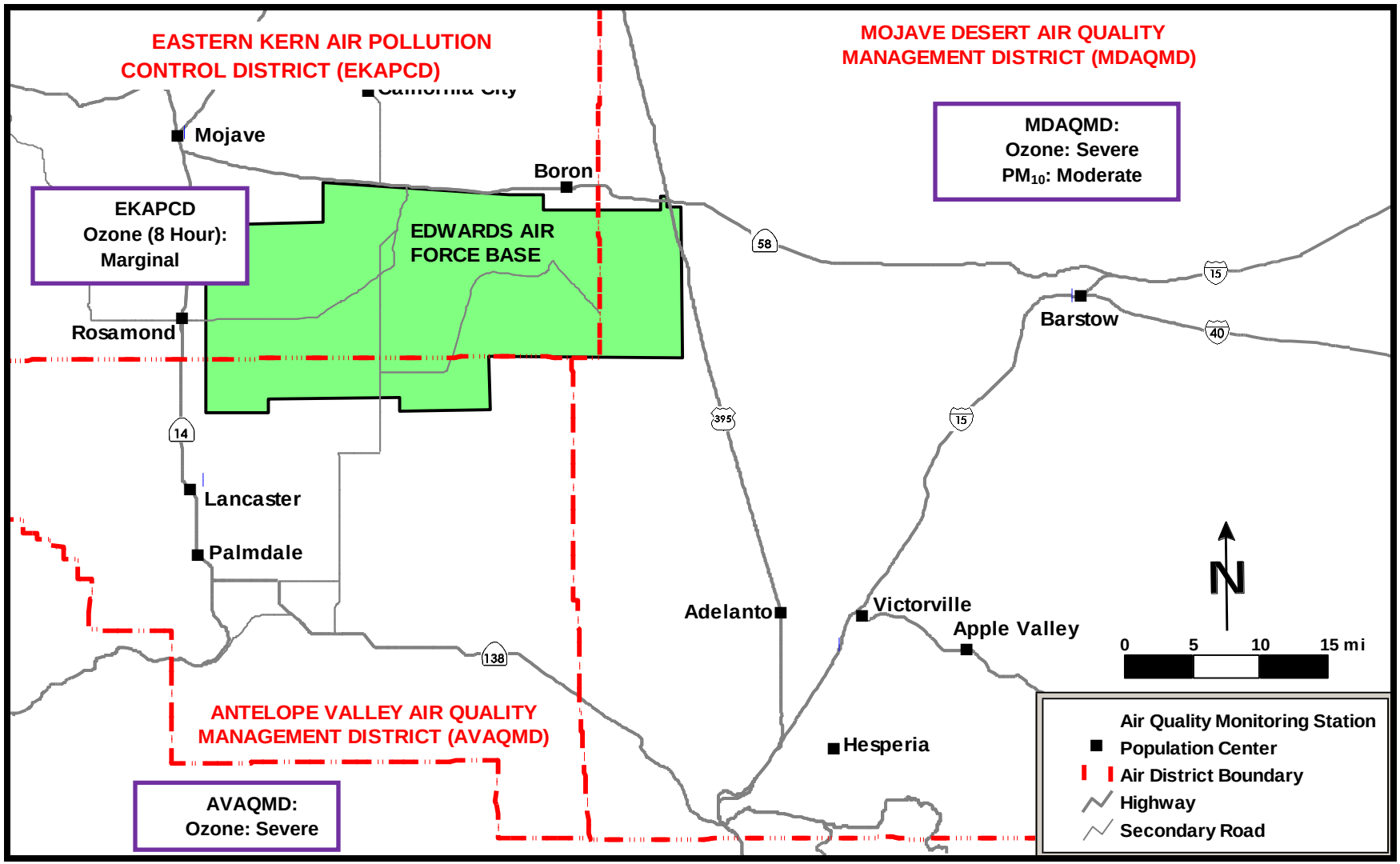

Figure 2. Air District Boundaries & NAAQS Nonattainment Status Map

States are also required to develop a State Implementation Plan (SIP) that sets forth how the CAAA provisions will be implemented. The SIP is the primary means for the implementation, maintenance and enforcement of the measures required to attain and maintain the NAAQS. The purpose of the SIP is twofold. First, it must provide a control strategy resulting in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is made in attaining the standards in each nonattainment area. Within the State of California, the authority to regulate sources of air emissions resides with the ARB and is delegated to local air pollution control and air quality management districts. Local districts enact rules and regulations to achieve SIP requirements.

3.2.3 Hazardous Air Pollutants

In addition to the requirements for regulation of criteria pollutants, the *CAAA* also sets forth regulations to control emissions of hazardous air pollutants (HAP) from stationary sources. The HAPs are defined as air pollutants that may cause an increase in fatalities or in serious, irreversible or incapacitating illness. The HAP emission sources at Edwards AFB can occur from stationary sources and/or operations such as: aboveground storage tanks, underground storage tanks, cleaning operations, internal combustion engines, paint booths, painting operations and heaters. The HAP potential-to-emit threshold values are 10 tons per year for a single HAP and 25 tons per year for any two or more HAPs. The U.S. EPA is required to separate out particular source categories of HAPs into National Emissions Standards for Hazardous Air Pollutants (NESHAP). Edwards AFB is defined as a major source of HAPs and must comply with many NESHAPs.

3.2.4 Greenhouse Gas Regulations

Climate change poses a serious threat to the economic well-being, public health, natural resources and the environment. Global warming is projected to have detrimental effects on industries, including agriculture and tourism, increase the strain on electricity supplies and contribute to unhealthy air. National and international actions are necessary to fully address the issue of global warming. Action taken by the federal government and California to reduce emissions of greenhouse gases will have important effects by reducing emissions of greenhouse gases (GHG). GHGs include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons. GHGs are typically reported as carbon dioxide equivalent" or "CO2 equivalent" or "CO2e" which provides a measure for comparing CO2 with other GHGs, based on the quantity of those gases multiplied by the appropriate number of metric tons of CO2 emissions with the same global warming potential (GWP) factor and commonly expressed as one metric ton of carbon dioxide equivalents (MTCO2e) ton of another greenhouse gas. For the purposes of this article, global warming potential values listed in Table A-1 of 40 CFR Part 98 are used to determine the CO2 equivalent of emissions.

On 30 October 2009, EPA issued the Mandatory Reporting of Greenhouse Gases Rule (EPA Mandatory Reporting Rule [MRR]). The EPA MRR applies to direct GHG emitters, fossil fuel suppliers and industrial gas suppliers, with a reporting threshold of 25,000 metric tons (MT) or more of carbon dioxide equivalent (CO2e) per year. The purpose of this rule is to collect accurate and timely GHG data to inform future policy decisions.

The EPA MRR applies to direct GHG emitters, fossil fuel suppliers and industrial gas suppliers, with a reporting threshold of actual emissions of 25,000 MT or more of CO2e per year. Reporting is at the facility level. Most importantly, EPA allows military installations to use distinct independent functional groupings to define the reporting facility as follows:

"Facility means any physical property, plant, building, structure, source, or stationary equipment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties."

Based on this disaggregation, Edwards AFB is near the reporting threshold and may trigger the reporting requirement if emissions continue to increase.

On 15 December 2011, the California Office of Administrative Law approved the revised ARB GHG MRR with an effective date of 1 January 2012. For Edwards AFB, all reports, which began with the 2013 submittal of 2012 data, must comply with the abbreviated reporting requirements. The ARB is the agency responsible for determining compliance with this regulation.

The revisions most relevant to Edwards AFB's activities include, but are not limited to:

1. A reduction in the applicability threshold for stationary combustion facilities from 25,000 MT to 10,000 MT of CO2e AND an aggregate maximum heat input capacity of 12 million British thermal units per hour (MMBtu/hr) or greater.

2. Facilities generating between 10,000 MT and 25,000 MT CO2e may submit an abbreviated GHG report. Third party verification is not required.

Affected facilities submit reports annually and provide data collected during the previous calendar year (CY). Reports for CY 2010 were due on 30 September 2011. Reports for future years are due on 31 March for emissions in the previous CY. The annual reports are submitted to EPA electronically using an electronic GHG reporting tool (e-GGRT), which is accessed through the Regulation's webpage. EPA verifies the data submitted and, unlike the California regulation, does not require third party verification. Prior to EPA verification, reporters are required to self-certify the data submitted to EPA.

During 2010 and 2011, ARB proposed various changes to the California MRR to harmonize its GHG emissions reporting requirements with the EPA MRR and the California Cap-and-Trade Program. By aligning requirements with federal requirements and other state programs, ARB aimed to minimize duplicative reporting by developing a unified reporting system that is compatible with all GHG programs.

On 14 December 2011, the California Office of Administrative Law approved the amended regulation. The amendments relevant to Edwards AFB's activities include, but are not limited to:

- An increase in the applicability threshold for electricity generation facilities from 2,500 MT to 10,000 MT of CO2e.
- A reduction in the applicability threshold for Stationary Combustion facilities from 25,000 MT to 10,000 MT of CO2e and an aggregate maximum heat input capacity of 12 MMBtu/hr or greater.
- Facilities generating between 10,000 MT and 25,000 MT CO2e may submit an abbreviated GHG report. Abbreviated GHG reports are:
    - Due no later than 1 June of each CY,
    - Based on default emission factors and default fuel heating values,
    - Not required to keep a written GHG Monitoring Plan,
    - Not required to undergo third party verification, and
    - First submission reported 1 June 2013 for CY 2012 GHG emissions; no reporting is required for CY 2010 or CY 2011 emissions.

3.2.5 General Conformity Applicability Analysis and Determination

Section 176(c) of the CAAA-90 contains legislation for the general conformity rule and prohibits federal agencies from conducting, supporting or approving actions that do not conform to an approved SIP.[1] Federal agencies are required to conduct a conformity review to demonstrate their actions conform with the approved SIP for the nonattainment or maintenance area prior to initiating the action. Under Title I of the CAAA-90, Congress established two types of conformity: transportation conformity and general conformity. Transportation conformity pertains to federal transportation projects and requires these projects to conform with transportation aspects of an approved SIP. General conformity covers all other federal actions not addressed by transportation conformity. The two conformity provisions only affect federal actions occurring in nonattainment areas and maintenance areas. This proposed action does not involve a federal transportation project; therefore, the air quality analysis for this EA focuses only on general conformity. Figure 3 presents a flowchart of the General Conformity process.

Federal facilities located in a NAAQS nonattainment area (Figure 2) are required to comply with federal air conformity rules and regulations in 40 CFR 51 and 93, *General Air Conformity Regulations*. Under General Conformity, a facility that initiates an action must quantify air emissions from associated stationary and mobile sources. To determine the relevant compliance requirements, calculated emissions are first compared to established *de minimis threshold* emission levels based on the nonattainment status for each applicable criteria pollutant in the area of concern. If the analysis finds that the project emissions are less than the *threshold* levels, then a conformity determination is not required. Table 4 presents the *de minimis* levels for each attainment level as applicable to this project.

[1] The federal conformity rule is codified in 40 CFR 93.

A conformity determination is not required for Federal actions (or portion thereof) that includes major or minor new or modified stationary sources that require a permit under the new source review (NSR) program (Section 110(a)(2)(c) and Section 173 of the Act) or the prevention of significant deterioration program (title I, part C of the Act).

Table 4. General Conformity De Minimis Levels

Pollutant	Area Type	Tons/Year
Ozone (VOC or NOx)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
PM-10	Serious nonattainment	70
	Moderate nonattainment and maintenance	100

Source: http://www.epa.gov/airquality/genconform/deminimis.html

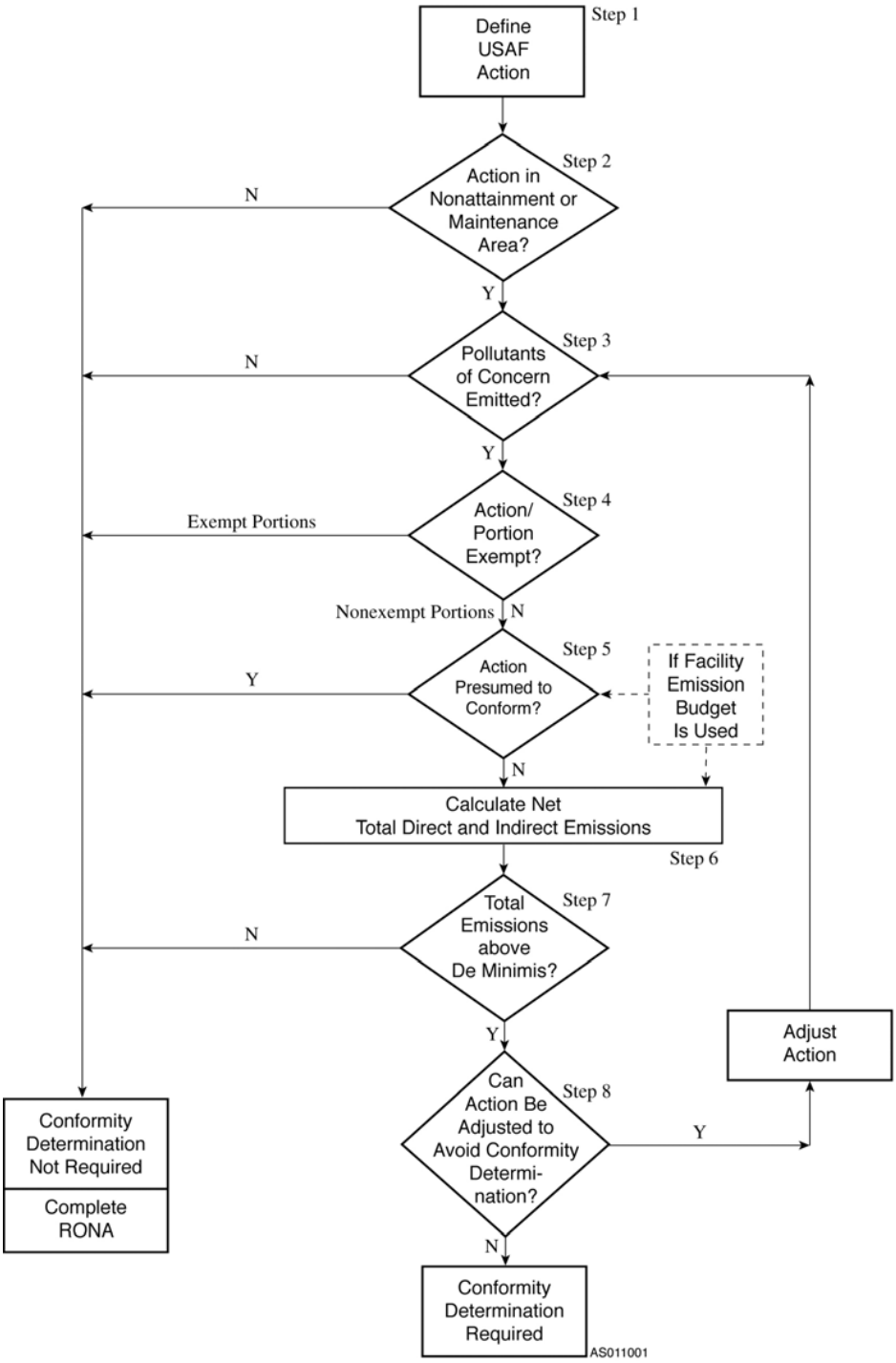

Figure 3. General Conformity Flowchart of Applicability Analysis

3.2.6 California Environmental Quality Act

The California Environmental Quality Act (CEQA) is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

CEQA applies to certain activities of state and local public agencies. A public agency must comply with CEQA when it undertakes an activity defined by CEQA as a "project." A project is an activity undertaken by a public agency or a private activity that must receive some discretionary approval (meaning that the agency has the authority to deny the requested permit or approval) from a government agency that may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment.

EKAPCD indicates that some proposed projects do not have significant (as defined by CEQA, Section 21068) air quality impact on the environment. The following operations do not have significant air quality impact on the environment:

1. Emit (from all project sources subject to EKAPCD Rule 201) less than offsets trigger levels set forth in Subsection III.B.3. of EKAPCD's Rule 210.1 (New and Modified Source Review Rule);

2. Emit less than 137 pounds per day of NO_x or Reactive Organic Compounds from motor vehicle trips (indirect sources only);

3. Not cause or contribute to an exceedance of any California AAQS or NAAQS;

4. Not exceed the District health risk public notification thresholds adopted by the EKAPCD Board; and

5. Be consistent with adopted federal and state Air Quality Attainment Plans.

State CEQA Guidelines also provide that certain categories of projects are exempt from environmental review except in certain instances (e.g., unusually sensitive location or other circumstances) (See CEQA Guidelines, Section 15300.2.). Projects exempt from EKAPCD permits pursuant to EKAPCD Rule 202 are not subject to CEQA review by the District.

Within MDAQMD jurisdiction, any project is significant if it exceeds the Significance Thresholds specified in the MDAQMD CEQA Guidelines (August 2011), as shown below:

1. The project generates total emissions (direct and indirect) in excess of the following thresholds (Table 6; MDAQMD CEQA Guidelines – only thresholds relevant to this project are listed):

   - Greenhouse Gases (CO2e): 100,000 tons/year; 548,000 lb/day
   - Oxides of Nitrogen (NOx): 25 tons/year; 137 lb/day
   - Volatile Organic Compounds (VOC): 25 tons/year; 137 lb/day
   - Particulate Matter (PM10) 15 tons/year: 82 lb/day
   - Particulate Matter (PM2.5): 15 tons/year: 82 lb/day

2. Generates a violation of any ambient air quality standard when added to the local background;

3. Does not conform with the applicable attainment or maintenance plan(s);

4. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.

A significant project must incorporate mitigation sufficient to reduce its impact to a level that is not significant.

AVAQMD's CEQA Significance Thresholds are identical to those presented above (AV CEQA & Conformity Guidelines, August 2011).

3.3 Water Resources

Water Resources describes the quality, quantity, sources and use of water at Edwards AFB. Edwards AFB has various facilities dedicated to water resources. They include six chlorination points for drinking (potable) water, numerous potable and nonpotable water storage tanks and two operating wastewater treatment plants (Main Base and AFRL with associated evaporation ponds).

The Antelope Valley Watershed covers an area of approximately 2,400 square miles. Edwards AFB is located at the lowest point within this watershed. As such, stormwater runoff for the entire watershed is directed toward Rogers Dry Lake, Rosamond Dry Lake and Buckhorn Dry Lake, the lowest points within the watershed.

The *Stormwater Pollution Prevention Plan (SWPPP), Edwards Air Force Base, California* (AFFTC, 2002) identifies the six Stormwater Management Units and the eight stormwater drainage areas on base. The *SWPPP* also describes each drainage area in detail, including watershed association, area covered, containment structures and areas and facility association.

3.4 Health and Safety

Health and safety on Edwards AFB are regulated by the Air Force Occupational and Environmental Safety, Fire Protection and Health (AFOSH) Standards (AFI 91-302), Federal Occupational Safety and Health Administration (OSHA) and California OSHA. The health of military and civilian Department of Defense personnel at Edwards AFB is supervised by Bioenvironmental Engineering Services and the Safety Department. Contractors are responsible for their own health and safety. The total accident spectrum encompasses not only injury to personnel, but also damage or destruction of property or products. For worker safety, the boundary of the immediate work area, job trailers, staging areas and ingress/egress routes defines the region(s) of influence. A contractor's attention to occupational health and safety rules and regulations will help avoid potential environmental issues and/or cross contamination in areas adjacent to the region(s) of influence.

Environmental conditions existing at Edwards AFB can present a physical/health hazard to personnel such as heat stress, venomous snakes, hantavirus from deer mice (*Peromyscus maniculatus*) and valley fever spores. Only rare instances of valley fever have been diagnosed at Edwards AFB. Project activities may be located adjacent to or on active Environmental

Restoration Program (ERP) sites; workers may also be exposed to contaminated soil, soil vapors and groundwater.

Chemical hazards include, but are not limited to, asbestos-containing material, lead-based paint, heavy metal-based paints, mercury, treated wood and polychlorinated biphenyls. Chemical hazards are considered hazardous materials and potentially hazardous waste during disposal. Generation of hazardous materials and disposal of hazardous waste are discussed in more detail in Section 3.8, Hazardous Materials and Waste.

Limited surveys are performed to detect the presence of chemical hazards prior to renovation work. However, when a building is to be demolished and disposed of, surveys are conducted for all suspect materials of a hazardous nature. These surveys are completed mostly by in-house staff and sometimes by a contractor. Any materials not identified in surveys (either renovation or demolition) and later discovered during work activities are assumed hazardous until an appropriately trained, accredited and as required, licensed inspector makes a determination, in accordance with applicable rules and regulations, through either sampling and analysis or industry knowledge and experience.

3.5 Asbestos

Many of the structures on Edwards AFB were constructed prior to enactment of current legislation regarding asbestos; although brand new materials can still contain asbestos. According to 40 CFR 61.145 and regardless of construction age/date, the U.S. EPA (Asbestos NESHAP) requires "…the owner or operator of a demolition or renovation activity and prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM…." Asbestos-containing material regulated under the NESHAP is referred to as "regulated asbestos-containing material" (RACM). RACM is defined in §61.141 of the NESHAP and includes: (1) friable asbestos-containing material; (2) Category I nonfriable ACM that has become friable; (3) Category I nonfriable ACM that has been or will be sanded, ground, cut or abraded; or (4) Category II nonfriable ACM that has already been or is likely to become crumbled, pulverized or reduced to powder. If the coverage threshold for RACM is met or exceeded in a renovation or demolition operation, then all friable ACM in the operation, and in certain situations, nonfriable ACM in the operation, are subject to the NESHAP. Disturbance of RACM and/or asbestos-containing waste materials without the use of proper emission controls, notification, disposal procedures and which cause visible emissions is a violation of the *National Emissions Standard for Asbestos* (40 CFR 61, Subpart M).

The State of California and Federal OSHA defines ACM as any material containing more than one percent asbestos and "asbestos" as any detectable amount. According to California, asbestos-containing construction material means any manufactured construction material which contains more than one tenth of one percent asbestos by weight (Title 8 California Code of Regulations [CCR] 1529). Asbestos waste is considered a hazardous waste by California. Both California and Federal OSHA have regulations for any concentration of asbestos. California and/or Federal OSHA have registration, training and certification requirements for companies and individuals that deal with asbestos; training is in accordance with certain EPA regulations.

3.6 Heavy Metals: Lead, Mercury and Chromium

Lead, mercury and chromium are considered heavy metals. Because of their toxicity, lead, mercury, chromium and other heavy metals are regulated by multiple agencies such as, but not limited to, U.S. EPA, OSHA, Department of Transportation and various California regulatory agencies. In California, waste disposal of these toxic materials is specifically addressed under Title 22 CCR Division 4.5 and the toxic materials are subject to record keeping and land disposal restriction requirements. In the past, lead, mercury, chromium and other heavy metals were frequently used in paints and coatings. Even after heavy metal containing paints are removed, residual and still hazardous amounts have been known to remain in substrate materials. Because of the age of many of the buildings, lead-, mercury-, chromium- and other heavy metal-based paints may be present on exterior and interior painted surfaces in existing support buildings, structures and fixtures. Remediation and disposal of these substances is managed by an AF Project Manager to ensure compliance with applicable rules and regulations. Environmental Management and Bioenvironmental Engineering may be consulted or engaged for certain tasks or responsibilities.

Lead-based paints (LBP) were commonly used from the 1950s until recently to enhance color and durability and are a corrosion, mold and mildew inhibitor. The U.S. EPA has established that paint, varnish, shellac or other coatings on surfaces that contain more than 1.0 microgram per cubic centimeter of lead, 5,000 parts per million (or more), or more than 0.5 percent lead by weight is considered lead-based paint. The United States banned the use of lead-based paint in residential homes and public buildings in 1978; but due to potential stock piles of lead-based paint, the AF uses 1981 as a cut-off date. Lead-based paints are *not* banned from industrial use. LBP may therefore be present on exterior and interior painted surfaces in commercial support buildings or near on-Base residential housing areas. The Consumer Product Safety Commission still allows up to 600 parts per million lead to be used in residential/commercial paints.

A "Lead Hazard" is when lead dust is identified on various interior/exterior surfaces or when lead in certain bare soil samples is determined to exceed levels set by the U.S. EPA and/or California Department of Public Health. The U.S. EPA's Lead Renovation, Repair and Painting rule requires certification and training for contractors, supervisors and workers who disturb lead based paint on pre-1978 (pre 1981 for Edwards AFB) Target Housing and Child Occupied Facilities, as defined in 40 CFR Part 745. The California Health and Safety Code, Section 105255, has made it illegal to create a lead hazard when conducting lead-related construction work, which is possible at lead concentrations well below that of lead-based paint. Containment per California Department of Public Health, Title 17 CCR Division1, Chapter 8 is also required for lead related activities. OSHA, both Federal and California, have regulations and training requirements for lead; lead certification may be required by certain California and Federal regulatory agencies, as well as EAFB rules for certain lead-related tasks. The regulations are more stringent for any detectable lead concentration in coatings when certain work practices are utilized for specific construction related tasks. Project personnel shall adhere to all applicable Federal, State and local rules and regulations.

Wastes containing lead are defined as hazardous under 40 CFR 261 and applicable State regulations as defined below. Wastes containing lead shall be disposed of in accordance with all applicable Federal, State and local rules and regulations.

- If lead meets or exceeds the Federal level of 5.0 milligrams per liter using the Toxicity Characteristic Leaching Procedure - and the waste is leaving the State of California; other States may have their own regulations.
- If the waste will be disposed of in California;
  - The Total Threshold Limit Concentration of 1,000 milligrams per kilogram, or;
  - The Soluble Threshold Limit Concentration (STLC) of 5.0 milligrams per liter. The STLC is also known as the Waste Extraction Test.

Mercury-based paints were commonly used in the United States prior to the 1950s. Mercury can still be found in some water based paints as a fungus inhibitor. Applicable Federal, State and local rules and regulations shall be adhered to.

Chromium-based paint was and is used as an oxidizer preventative on structural steel. Applicable Federal, State and local rules and regulations shall be adhered to.

3.7 Polychlorinated Biphenyls, Mercury from Fluorescent Tubes and High-Intensity Discharge Lamps

Polychlorinated biphenyls (PCB) are a group of organic chemical mixtures used as insulators in electrical equipment such as transformers, switches, voltage regulators, cables and pre-1980 fluorescent light ballasts (or ballasts without a 'non-PCB' mark) due to their excellent cooling capability and low electrical conductivity. PCBs were also used in hydraulic and heat-transfer fluids, paints, adhesives, window glazing and caulking compounds. PCBs range in consistency from heavy, viscous liquids to waxy solids. PCBs are extremely toxic and hazardous to human health and the environment and are no longer manufactured in the U.S. However, during the fifty years of production from 1929 to 1979, hundreds of millions of pounds were produced and PCB can still be found in places where they were originally used. At Edwards AFB, a fluorescent light ballast is considered to contain PCB unless it is specifically marked by the manufacturer as 'non-PCB.'

The Air Force Materiel Command (AFMC) established a "PCB-free" date of 31 December 1998 for all AF facilities. The AFMC "PCB-free" is defined as less than 50 parts per million (ppm) PCBs, which the Base achieved in December 1998 for all "known" PCB items that are on the base inventory list. California regulates PCB disposal at equal to or greater than 5 ppm and Edwards AFB does have known transformers and other electrical items with less than 50 ppm PCBs. The Exterior Electric Shop manages transformer repair, including tests to determine the PCB content of transformers and keeps an inventory of PCB-filled electrical equipment. All transformers above 5 ppm PCB must be removed from the installation when taken out of service per the state regulatory requirements (22 CCR, Division 4.5) and the *Edwards AFB Hazardous Waste Management Plan* (*HWMP* July 2010).

Fluorescent lamps and high-intensity discharge lamps contain significant amounts of mercury compounds. Mercury-containing materials are managed as hazardous and universal waste due to the concentration of mercury and other regulated metals when tested using the Toxicity Characteristic Leaching Procedure test method, adopted by the U.S. EPA.

3.8 Hazardous Materials and Hazardous Waste

A hazardous material (HM) is any material whose physical, chemical or biological characteristic, quantity or concentration may cause or contribute to adverse effects in organisms or their offspring; pose a substantial present or future danger to the environment; or result in damage to or loss of equipment, property or personnel. Edwards AFB uses and stores a wide variety of HM in construction and renovation projects. HM used on base include, but are not limited to, solvents, paints and paint thinners, glues, corrosives/caustics; batteries; sealants; adhesives; cements; caulking; hydraulic fluids; and petroleum, oils and lubricants.

Project managers and authorized material coordinators are responsible for HM requisition from local, off-base sources or the base Hazardous Material Distribution Support Center. Hazardous materials used on Edwards AFB will require review by Bioenvironmental Engineering, Fire, Ground Safety and Environmental Management to identify any hazardous material or hazardous waste concerns and to track hazardous material and hazardous waste. Prior to bringing any new HM on base, contractors are required to provide a copy of the relevant material safety data sheet (MSDS) to Environmental Management, who maintains a master inventory list, with all MSDSs, in the standard Hazardous Material/Waste Tracking System. All organizations and contractors are required to maintain strict inventories of all their HM. Furthermore, organizations are also required to reduce the quantity of hazardous materials purchased and used, or replace them with nonhazardous material, if possible.

The use of hazardous materials results in the generation of hazardous waste. Hazardous wastes (HW) are those substances that have been discarded, recycled or no longer in use and because of their quantity, concentration or characteristics have the potential to cause an increase in mortality, serious irreversible illness or pose a substantial hazard to human health and/or the environment if improperly treated, stored, transported and/or discarded. Examples of HW include paint waste, contaminated rags and soil contaminated by PCB, ACM and LBP. The *Edwards AFB Hazardous Waste Management Plan* (*HWMP*) (July 2010) establishes procedures to achieve compliance with applicable federal, state and local regulations for hazardous waste management. The *HWMP* contains requirements for solid and hazardous waste characterization, training, accumulation, turn-in and disposal and procedures for inspections, permits and recordkeeping.

3.9 Solid Waste

Solid waste refers to nonhazardous garbage or refuse, sludge and any other discarded solid material resulting from residential, commercial and industrial activities or operations. Solid waste can be classified as construction/demolition, inert debris, green waste, nonhazardous recyclables or nonhazardous nonrecyclable waste. Solid waste will be treated in one of two ways: recovery-reuse/recycling (diversion) or placement in a landfill. Recycling includes diverting materials that are not reusable from the solid waste stream and using these extracted materials as feedstock for reprocessing into other useful products. Recovery includes the separation of materials or components from the solid waste stream in a manner that retains its original form and identity, for the purpose of reuse in the same or similar form as it was produced. Mixing recyclables with non-recyclable waste contaminates recyclable materials and requires that the material be sorted at some point before disposal. Source separation at the site of

waste generation is preferred, as sorting comingled non-recyclables and recyclables is very labor intensive and often not cost effective. Materials not suitable for reuse or recycling, may be used to generate electricity in a waste-to-energy facility, yielding a large reduction in the volume and mass of material which must be disposed of in a landfill. Any waste generated and not diverted places additional demand onto the existing solid waste collection, transportation and disposal systems and consumes scarce resources in the form of materials and energy. Landfills have a potential to cause groundwater contamination through leaching of contaminants into the soil and also are capable of generating greenhouse gas emissions. The State of California has set a goal that at least 75 percent of all waste generated must be diverted annually by the year 2020. In addition, EO13514, Federal Leadership in Environmental, Energy and Economic Performance requires federal agencies to divert at least 50 percent of all non-hazardous solid waste and at least 50 percent of all construction and demolition waste by the end of fiscal year 2015. The AF's Net Zero Energy, Water and Waste policy requires reducing the disposal of waste in all its forms (e.g., non-hazardous solid waste, hazardous waste and medical waste) through the application of the pollution prevention hierarchy to the greatest extent practicable (to include avoiding landfilling and maximizing recycling).

Edwards AFB operates a nonhazardous (municipal solid waste) landfill within the Main Base area that is located approximately 1.5 miles (2.4 kilometers) to the northwest of the intersection of Forbes Avenue and Landfill Road. All disposals of Base-generated solid waste and recyclables at the Main Base Active Landfill and off-Base landfills and recycling and composting facilities must be reported through the 412th Civil Engineer Group Environmental Management Division. All disposals of solid waste and recyclables at the Main Base Active Landfill are coordinated through the 412th Civil Engineer Group Operations Division (412 CEG/CEO).

Edwards AFB has an established procedure for disposing of construction and demolition debris. The volume of construction and demolition debris is minimized by segregating recyclable materials to the maximum extent practicable before demolition. The remaining construction and demolition debris and other construction-related solid waste must be recycled or disposed of at an approved off-site, state-licensed facility. Currently Edwards AFB is developing an additional procedure on processing inert debris and once completed, a copy of both these procedures will be available from the 412 CEG/CEO.

Construction and demolition (C&D) debris consists of solid waste generated from the construction, remodeling, repair or demolition of structures. The C&D debris can include, but is not limited to: bricks, wood, wall coverings, plaster, dry wall, plumbing, fixtures, non-asbestos insulation or roofing shingles, carpets, tile, glass, plastics, electrical wiring and metals. The Base landfill currently does not accept C&D debris. At current disposal rates, the landfill is expected to reach permitted capacity in the year 2023, without including C&D debris. Due to the potential volume of C&D debris generated and the lack of landfill capacity on Base, all new construction contracts and most existing contracts require the contractor to dispose of or recycle C&D debris at an approved, off-Base, state-licensed facility. Some recyclable materials such as green waste, scrap metal, and fill material may be able to be accepted on a case-by-case basis at the Base landfill or borrow pits. All activities of this nature must be coordinated through the 412 CEG/CEO.

Inert debris is explicitly considered concrete, asphalt and paving materials. Edwards AFB has

created a processing area for inert debris waiting to be recycled and storage areas for inert debris that has been processed into construction products to be used as 'base material.' The material at these storage areas has been ground into gravel and can be reused as road and construction base, fill material and erosion control to name a few. A contractor operates the program under the administration of 412 CEG/CEO. Environmental Management provides environmental compliance oversight. Inert debris and processed material generated from projects is stockpiled according to a 412 CEG/CEO instruction in areas preapproved by Environmental Management. Inert debris will not be considered C&D debris and will not be disposed of, but may be recycled at an approved, off-Base, state-licensed facility. At the government's discretion, the contractor may crush inert debris and remove to a storage area designated by 412 CEG/CEO, at no additional cost to the government, in lieu of off base disposal. Details of inert debris handling shall be agreed upon at the start of project activities.

3.10 Biological Resources

Biological resources include native and introduced plants that comprise various vegetative habitats, the animals that are found in such habitats and the natural environment that support wildlife populations. Edwards AFB manages biological resources that are typical of the western Mojave Desert. The plant and animal species that characterize the desert community can occur in previously disturbed areas around the base, including areas surrounding existing structures and road shoulders.

The *Sikes Act* (16 U.S.C. 670a–670o) provides for cooperation by the Department of Defense with State agencies in planning, development and maintenance of fish and wildlife resources on military reservations throughout the United States. Although species-specific protection of non-federally listed species is not mandatory on federal installations, management of these species contributes to the overall health of their natural populations, the environment and reduces the likelihood that these species would have to be given additional legislative protection in the future. Edwards AFB also manages non-federally listed species through the use of general conservation measures outlined in the *Integrated Natural Resources Management Plan for Edwards Air Force Base, California, AFFTC Plan 32-7064* (INRMP) (95 ABW, 2008) and any future revised INRMP.

Migratory birds are protected under the *Migratory Bird Treaty Act* (*MBTA*) (16 U.S.C. 703-712) and Executive Order 13186, R*esponsibilities of Federal Agencies to Protect Migratory Birds* (11 January 20111). Migratory birds typically build their nest on roofs, on ledges above doors and building entrances and along eaves of occupied and abandoned buildings and other facilities and in nearby trees planned for removal during construction activities. Migratory birds, their active nests, eggs and young in the nest are protected under the *MBTA* from being harmed, removed or killed without a depredation permit from the USFWS.

3.10.1 Desert Tortoise Habitat

While there are several species of interest at Edwards AFB, the desert tortoise (*Gopherus agassizii*) is the only federally listed species under the federal *ESA* that is a permanent full-time resident. The desert tortoise is both federally and state listed as threatened under the *ESA* and *CESA*. Most areas on base have the potential to be inhabited by desert tortoises. Desert tortoise

densities vary throughout the base, with the highest densities mostly concentrated in USFWS designated "Critical Habitat" comprising about 60,800 acres on base (Figure 4). Critical Habitat is designated by the USFWS as "the specific area within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the ESA, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection" (16 USC § 1532). Critical habitat is, in general, less disturbed and has higher levels of protection and more restrictions in its use.

Edwards AFB has consulted with the USFWS and obtained various BOs with specific terms and conditions and prudent measures for the protection of the desert tortoise and its habitat on Edwards AFB. The following BOs are pertinent to this EA.

a. *Biological Opinion for the Reinitiation of Formal Consultation–Routine Operations, Construction Projects, and Facility Maintenance of Roads, Utilities, and the Runway at the Jet Propulsion Laboratory and North Base Areas of the Air Force Flight Test Center* (1-8-98-F-21R) (USFWS 1998).

b. *Biological Opinion for Routine Operations and Facility Construction within the Cantonment Areas of Main and South Bases, Edwards Air Force Base, California* (1-6-91-F-28) (USFWS 1991).

c. *Biological Opinion for Ames-Dryden Flight Research Facility Complex and the National Aeronautics and Space Administration Lease Area of Edwards Air Force Base, California*, amended (1-8-93-F-5) (USFWS 1993a).

d. *Biological Opinion for the Precision Impact Range Area, Edwards Air Force Base, California* (1-8-94-F-6) (USFWS 1994).

e. *Programmatic Biological Opinion for a Rocket Testing Program and Support Activities at Phillips Laboratory, Edwards Air Force Base, California* (1-8-97-F-10) (USFWS 1997b).

f. *The Biological Opinion for the Development and Operation of Eight Borrow Pits throughout the Air Force Flight Test Center in Kern, Los Angeles, and San Bernardino Counties, California* (1-8-96-F-56) (USFWS 1997a).

g. *The Biological Opinion for Operations and Activities at Edwards Air Force base, California* (8-8-14-F-14) (USFWS 2014).

3.10.2 Burrowing Owl Habitat and Other Birds Protected Under the Migratory Bird Treaty Act

The burrowing owl (*Athene cunicularia*) is currently a federal and California species of concern and is protected under the auspices of the *MBTA*. On Edwards AFB, burrowing owls are known to inhabit man-made cover features such as irrigation pipes and culverts along graded road shoulders, as well as natural cover features such as animal burrows or dens previously occupied by desert tortoise, desert kit fox or badger. Since burrowing owls are commonly found in disturbed areas (including areas adjacent to the flightline) there is a higher potential of impeding AF activities. Known locations of past burrowing owl nesting locations can be found in Figure 5.

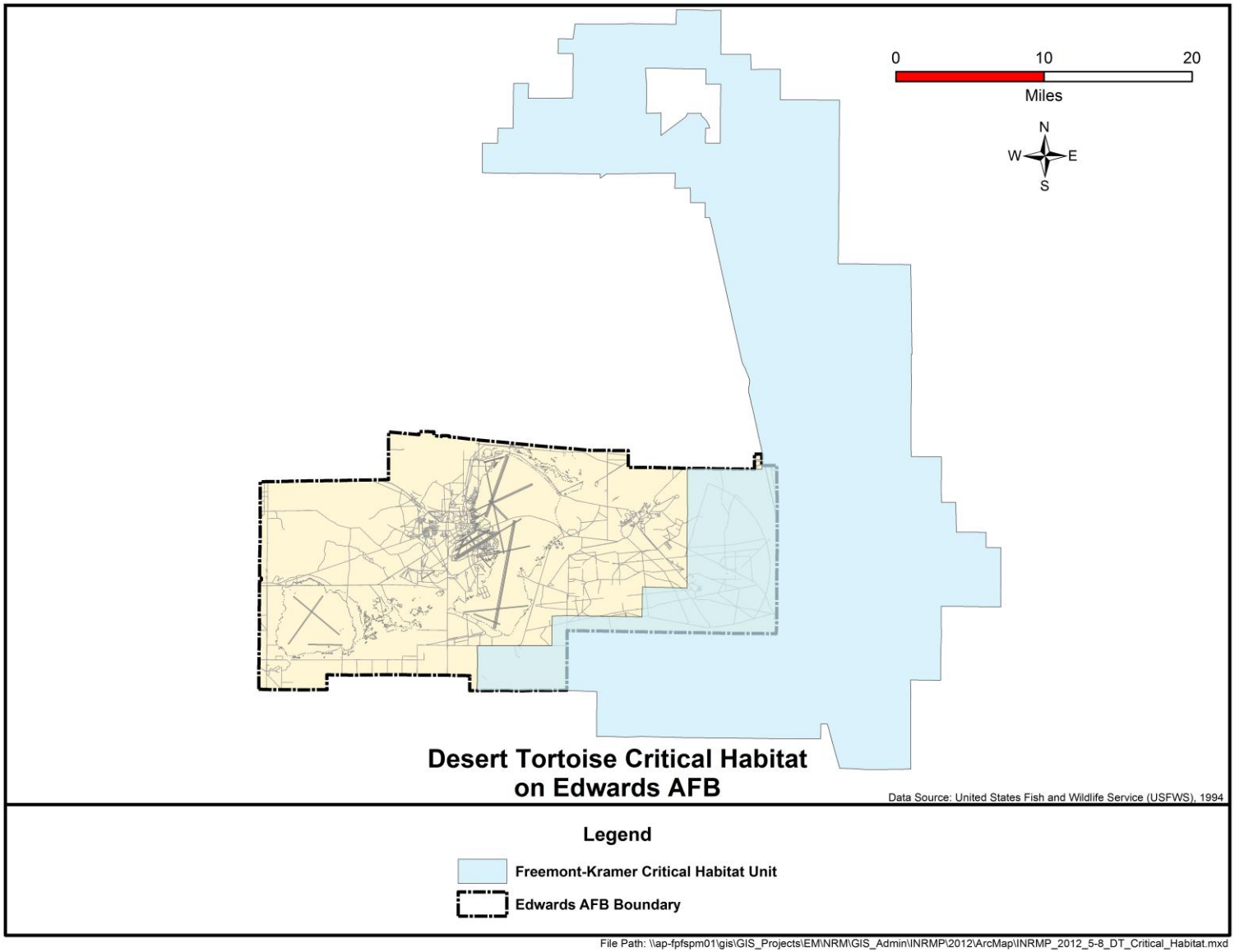

Figure 4. Desert Tortoise Critical Habitat

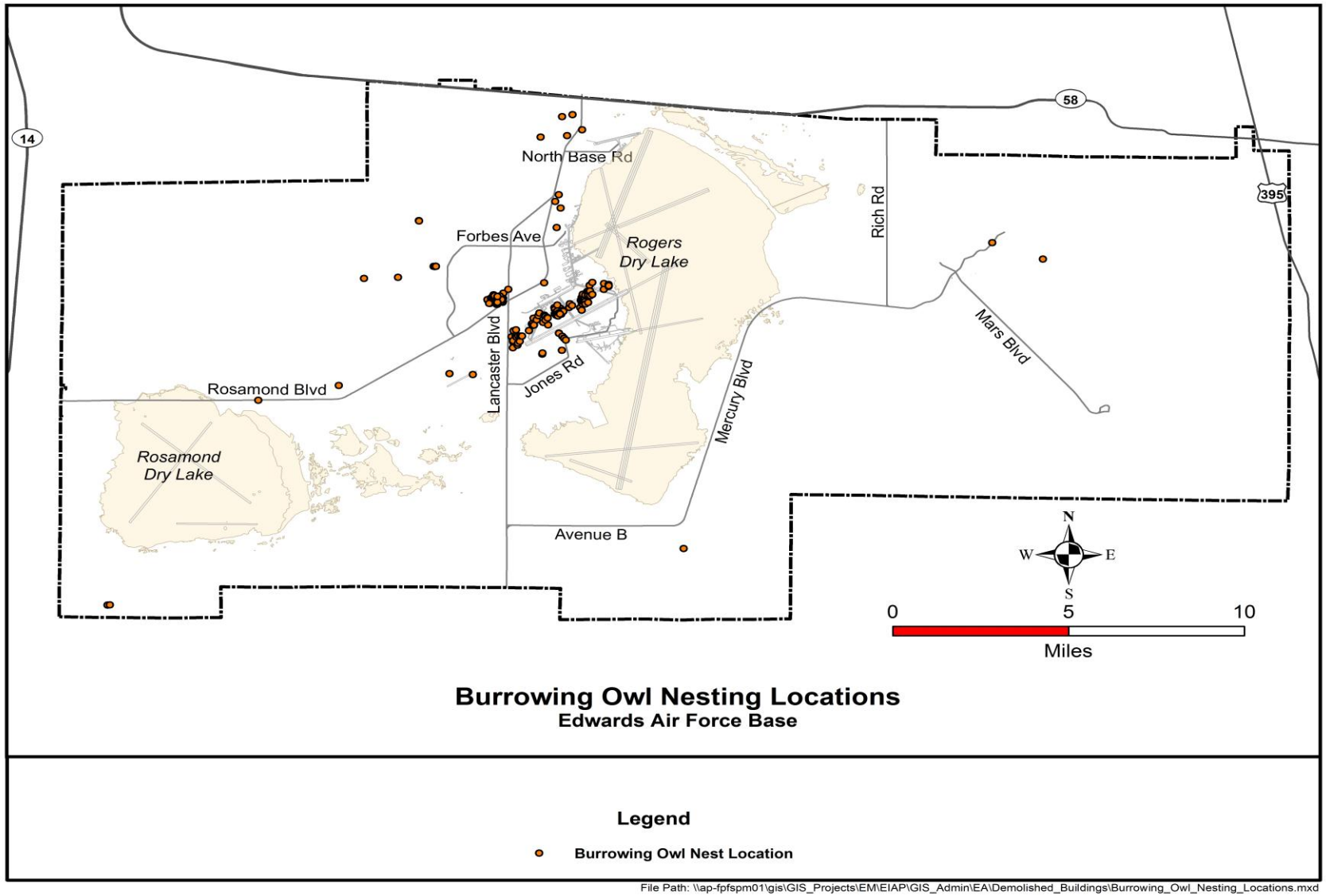

Figure 5. Burrowing Owl Nesting Locations

At least 300 species of birds have been seen on Edwards AF Base. The most common birds that nest on buildings or structures associated with buildings/facilities include the house finch (*Carpodacus mexicanus*), phoebes (*Sayornis* sp.) and barn owls (*Tyto alba*). There are also several ground-nesting birds which can be affected by ground disturbance activities (such as the greater roadrunner [*Geococcyx californianus*] and California quail [*Callipepla californica*]).

Management of burrowing owls on Edwards AFB is addressed in Edwards AFB INRMP where specific goals and objectives strive to conserve migratory birds and enhance the quality of their habitat. In addition, Edwards AFB established a burrowing owl conservation area consisting of about 184 acres within the Main Base area. The management area was fenced and signs were installed to ensure the conservation area would be protected.

3.10.3 Mohave Ground Squirrels

The Mohave ground squirrel is currently a threatened species under the *CESA*. On Edwards AFB, the Mohave ground squirrel population distribution is widely scattered east, west and south of Rogers Dry Lake in creosote bush scrub and saltbush scrub habitat (including desert tortoise critical habitat on the PIRA (Figure 6).

3.10.4 Bat Species

There have been at least six species of bats documented as occurring on Edwards AFB (INRMP 2008), most of which are considered species of concern by the state and one, the western mastiff bat (*Eumops perotis*), is a federal species of concern. There are a few potential bat roosting and foraging areas throughout Edwards AFB, which include: hangars, abandoned buildings, rocky outcrops, test stands and/or small bodies of water such as sewage and golf course ponds (Brown-Berry et al. 1998). Bats have been recorded roosting in both occupied and unoccupied buildings, hangars and test stands, including a maternal colony in a building at Leuhman Ridge; they have been detected in nearly all parts of the base during past surveys (Brown-Berry et al. 1998). Edwards AFB is suspected to lie within the migratory path of several bat species, including Mexican free-tailed bat and has the potential to provide seasonal as well as permanent habitat for some species (Brown-Berry et al. 1998).

3.10.5 Plant Species

There are seven general habitats on the base. These include alkali sink, creosote bush scrub, halophytic phase saltbush scrub, arid phase saltbush scrub, Joshua tree woodlands, mesquite

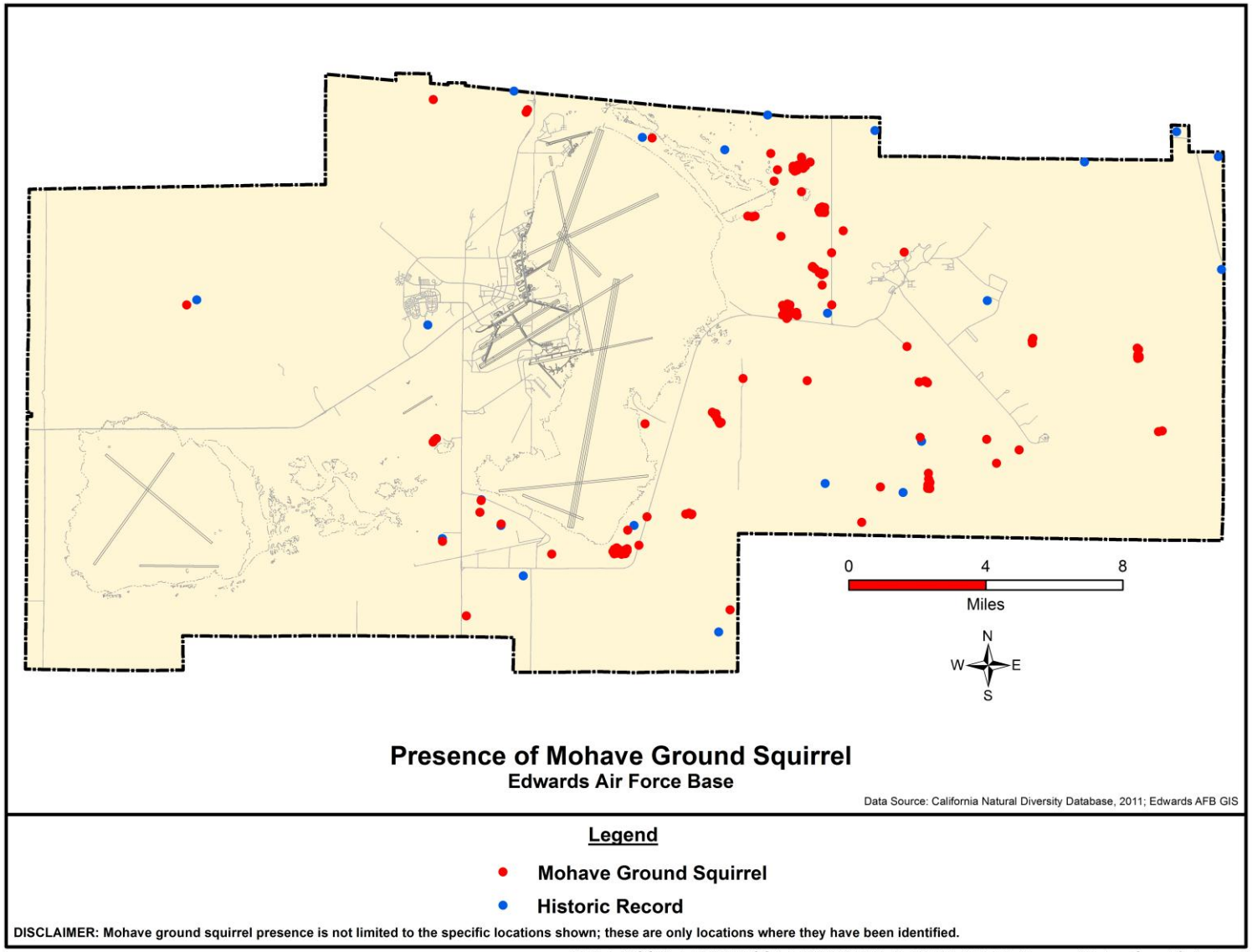

Figure 6. Presence of Mohave Ground Squirrel

woodland and burro bush scrub. Within these habitats, there exists 12 sensitive plant species of interest, listed as a List 1B or higher by the California Native Plant Society. List 1B refers to plants of very limited distribution and whose global populations are potentially threatened and are considered California Department of Fish and Wildlife species of concern. Of these 12 species, however, only 3 have been extensively surveyed on base: Barstow woolly sunflower, alkali mariposa lily and desert cymopterus (INRMP 2008). Figure 7 shows the known locations of sensitive plant species. Populations of these plants vary from a few individual plants to thousands in a given area. There is no federal protection for these species at this time. Nearly all known sensitive plants are found in remote areas and are not located within developed areas of the base (see Figure 7). However, management of these plant species of concern is addressed in the Edward's AFB INRMP.

3.11 Cultural Resources

3.11.1 Regulatory Requirements/Guidance

The NHPA requires federal agencies to consider historic properties in planning activities. It specifies the coordination process with the SHPO in order to establish checks and balances. Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and provide the ACHP an opportunity to comment.

Archeological and Historical Preservation Act of 1974 ensures that the Federal agency notifies the Secretary of the Interior where significant cultural data are encountered during the execution of any federal undertaking.

Title 36 Code of Federal Regulations Part 800, *Protection of Historic Properties*, defines how Federal agencies meet the statutory responsibilities described in the NHPA. This procedure addresses the relationship to other provisions of the NHPA and the timing for accomplishing Section 106 review.

Department of Defense Instruction 4715.16, *Cultural Resources Management*, addresses the management and maintenance of cultural resources under DOD control. It supports sustainable management through a comprehensive program of historic preservation, mission support, responsible stewardship and consultation with internal and external stakeholders.

AFI 32-7065, *Cultural Resources Management Program*, sets forth AF guidelines for protecting and managing cultural resources on property affected by AF operations in the United States and its territories.

3.11.2 Resource Management

Cultural resources at Edwards AFB may include sites, buildings, structures and objects with national, state or local cultural value. This value may be attributed to the resource by subject matter professionals or interested parties. Federal law has placed the burden of identifying, evaluating and protecting cultural resources found on federal lands or those affected by federal programs and funding, on the federal land owners. As a federal agency owning federal land, Edwards AFB is required to identify cultural resources present on the installation. Archeological resources are initially identified during field survey, with evaluations conducted through

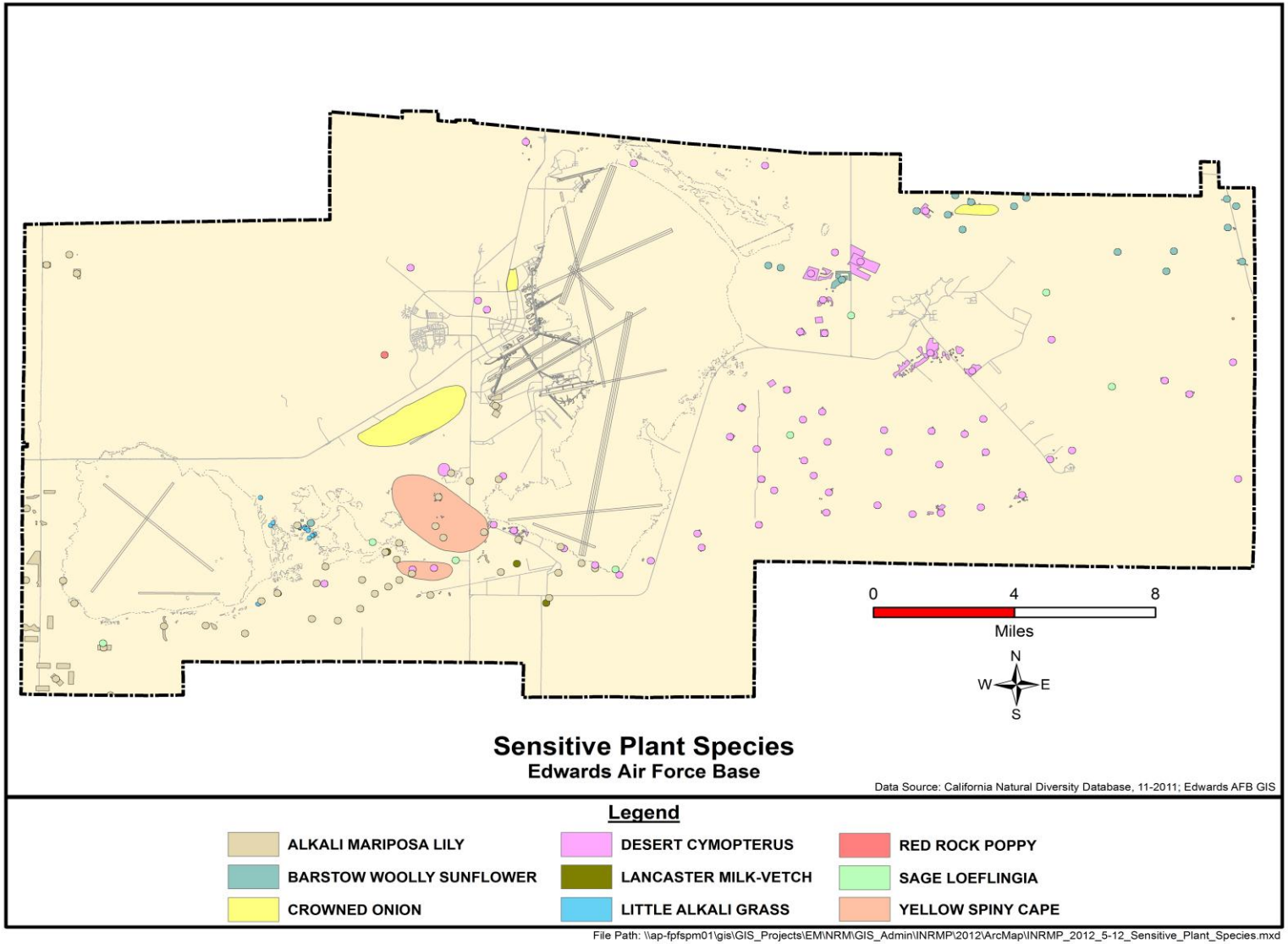

Figure 7. Sensitive Plant Species

excavation of sites and extensive research. Identification of historic facilities begins with a review of the building's records, construction, historical and current function and association to various military programs. Further evaluations entail extensive research and documentation of the building or structure. The level of protection that Edwards AFB is required to extend a resource depends upon the complexity of the resource, the basis for its historic significance, its integrity and rarity and the level of threat to the resource. The Department of Interior has established *Standards for the Treatment of Historic Properties*, to which Edwards AFB must comply to minimize the potential for a finding of adverse effect.

The demolition list associated with this environmental assessment contains facilities that are eligible for the NRHP. The ICRMP and its accompanying *Programmatic Agreement between the United States Air Force and the California State Historic Preservation Officer Regarding Implementation of the Air Force Flight Test Center Mission and the Integrated Cultural Resources Management Plan at Edwards Air Force Base, California* (2009) collectively provide the streamlined procedures for conducting in-house Section 106 review, per the NHPA. If during this internal Section 106 review, a proposed undertaking is found to have the potential to adversely affect a historic property and neither alternatives nor avoidance measures reduce the effect, the SHPO must be notified. Immediate consultation with the SHPO begins and results in a memorandum of agreement (MOA) stipulating acceptable mitigating treatments. Demolition of any property eligible for the NRHP qualifies as an adverse effect and, therefore, requires SHPO consultation. Appendix A contains the list and locations of the facilities associated with this EA and their eligibility status.

3.12 Geology and Soils

Geologic resources consist of naturally-occurring igneous and volcanic rocks and associated unconsolidated sediments consisting largely of alluvial and wind-deposited sand overlying shallow bedrock or several hundred feet of ancient sand, silt and clay lakebed deposits. Soil refers to the uppermost layers of surficial geologic deposits and is developed by the weathering of those deposits. The United States Department of Agriculture Natural Resources Conservation Service prepared a *Soil Survey of Edwards Air Force Base, California* (1996 and 1997). The developed areas of the Base have loams, sandy loams or loamy sands. Some soils have a silt or clay component especially around the lakebeds where clay predominates. All soils at Edwards AFB have low organic carbon content. The soil survey reveals that the erosion hazard rating for soils found in the area range from slight to severe for wind erosion and none to moderate for water erosion. The soil survey also noted the possibility of erosion is increased if the soil is left exposed during site construction or demolition. Desert soils often have a thin biotic crust that prevents erosion and takes up to hundreds of years to recover after removal by grading.

3.13 Fill Material

Fill material would be used for backfilling areas where the concrete slabs were removed during demolition. The source of fill material would come from approved borrow sites on-Base. The Civil Engineering Contract Management Office must approve all removal of on-Base fill material coming from the landfill borrow site. The Civil Engineering Heavy Repair Office must approve removal of fill material for all other on-Base borrow pits. The *Environmental*

Assessment for Borrow Sites at Edwards Air Force Base, California (AFFTC, 1996; recertified in 2002) is the environmental document guiding fill material use on Base.

3.14 Environmental Restoration Program (ERP)

The ERP at Edwards AFB investigates and remediates soil and groundwater contamination created by releases of hazardous chemicals, such as petroleum products and solvents. The U.S. EPA has developed a nationwide list of sites with a potential, or verified, threat to human health and/or the environment, known as the National Priorities List (or Superfund). Edwards AFB falls under *CERCLA* because the entire base is included on the National Priorities List. As a result, the Air Force Civil Engineer Center (AFCEC) Installation Support Team EAFB manages the ERP to identify, investigate, assess and clean up hazardous waste at former storage and disposal sites and testing facilities on the Base as required by *CERCLA*, *SARA* and *RCRA*.

In order to manage cleanup of contaminated sites, the ERP areas have been consolidated into ten operable units (OUs), based on location and/or type of facility or contamination. A preliminary assessment was conducted to locate potential contaminated sites within the OUs. Four hundred and sixty-one sites were identified. Restoration efforts begin with archival research to determine where contaminated soil or groundwater may exist. Soil boreholes are drilled so that samples can be collected from the ground surface to the water bearing zone. Depth to groundwater ranges from approximately 10 feet below ground surface (near the dry lakebeds) to over 500 feet below ground surface (in the rocky highland areas). Where soil samples show contamination near the groundwater or where groundwater occurs in fractured bedrock, monitoring wells are installed. Groundwater samples are collected to track possible contamination from chemical spills and to characterize the extent of groundwater contamination. After the extent of contamination is determined, restoration technologies can be applied to increase attenuation of the contaminants, extract the contaminants or monitor the contaminants. Extraction wells are connected by a series of underground or aboveground pipes that convey contaminated soil, gas, groundwater or free-product to treatment systems for remediation or disposal. Monitoring wells are then used to observe the effects of groundwater remediation activities. There are a number of monitoring wells located throughout the base in the area where buildings are planned for demolition/renovation.

3.15 Socioeconomics

Edwards AFB is one of the largest employers in the Antelope Valley with a daily workforce of 10,420 and an annual economic impact of $1.44 billion (Edwards Air Force Base Economic Impact Analysis Fiscal Year 2013). Edwards AFB's personnel and local contracts indirectly create jobs in the local area and boost the local economy. In 2013, Edwards AFB added approximately 12,224 indirect jobs to the Antelope Valley. The local contracts relevant to the proposed alternatives in this EA include Construction, Operations & Maintenance and Service.

3.16 Energy Conservation

Edwards AFB actively seeks to promote energy conservation wherever possible. Energy is described as any usable power, including but not limited to coal, petroleum products, steam, electricity, natural gas, propane, military operational fuels and propellants, alternative fuels (E85) and renewable energy, including but not limited to synthetic and biomass-derived fuels,

solar, wind, geothermal and nuclear. Under AFPD 90-17 (2011), the AF "…has a strategic rationale and operational imperative for both decreasing energy demand and diversifying sources of supply as a means to enhance its energy security." An applicable goal to reduce demand for this EA is reducing installation energy intensity by 3% per annum with average amount of energy consumed per building (sqft) as the metric. The AF's energy policy is to "…provide maximum opportunities to enhance the AF energy security posture and energy management." This policy is the foundation of the Energy Plan (SAF/IE, 2010) and assigns energy responsibility to all AF personnel. Thus, Base personnel are encouraged to become actively involved in reducing energy consumption.

Per AF Head Quarters guidance, a strategic objective "…that places an emphasis on reducing real property and associated operating costs 20 percent by the year 2020" (HQ USAF/A7C Memo, 29 September 2011) has been implemented. Per the Base General Plan, this objective "…requires installations to review their current operations and seek space, energy and operational efficiencies to save money allowing funds to be diverted for the recapitalization of AF weapons systems" (2013). Many Base structures were originally constructed when energy conservation was not a prime concern; therefore, buildings are not as energy efficient as new or renovated buildings. Demolition or renovation of these buildings is expected to reduce the overall energy consumed by Edwards AFB.

4.0 ENVIRONMENTAL CONSEQUENCES

This section addresses the environmental impacts associated with the proposed action and alternatives and the minimization measures that would reduce these impacts to insignificant levels. Changes to the natural and human environment that could result from the implementation of the proposed action and alternatives were analyzed relative to the existing environmental conditions. The action alternatives will generally involve some minor impacts relating to site design and preparation, and construction as part of renovation, repairing, stabilization and demolition action. Activities relating to the implementation of any of the alternatives will have minimal impacts due to compliance with federal, state and local regulations.

4.1 Air Installation Compatible Use Zone/Land Use

The proposed activities associated with any of the alternatives would be compatible with the existing land use established in the Base General Plan. All proposed activities will require Planning and Zoning Committee approval. Land Use includes FO damage and noise.

4.1.1 Alternative A – Demolish Facility (Proposed Action)

Foreign Object Damage: FO may end up on runways, taxiways or aprons as a result of the proposed action, if the facility is near the flightline. FO could puncture tires, damage engines or cause possible injury or death to airfield personnel. The prevention of FO damage is targeted specifically at flightline areas and procedures are contained in AFMC Supplement 1 (April 2012) to AFI 21-101, *Aircraft and Equipment Maintenance Management* (July 2010). The 412th Test Wing Logistics Quality Assurance Inspection Branch manages the reduction and/or elimination of FO damage. Continued implementation of standard operating procedures for FO damage prevention would reduce the potential for impact below significant levels. Required minimization measures are listed below.

a. Compliance with the Base Design Standards (412 TW/CE, 2013) that have been prepared and adopted as part of the Base General Plan.

b. For demolition projects near the flightline, the proponent/contractor shall contact Airfield Management for FO reduction guidelines and all project personnel shall use standard operating procedures for the prevention of FO damage.

c. Projects requiring soil excavation may need to have soil stabilized in order to prevent FO. Contact Airfield Management for recommendations on preferred methods of soil stabilization.

d. All demolition projects shall avoid damage/interference with existing ERP wells and treatment systems, require interim land use controls/mitigation measures if the building is over a plume and require compliance with any land use controls or other measures. Contact the AFCEC Installation Support Team EAFB for ERP wells and treatment systems locations, land use controls and mitigation measures.

Noise: Building demolition and disposal activities may cause a short-term increase in noise hazards. Construction equipment such as pneumatic hammers, drills and other construction operations can produce noise levels above 85 decibels, which is considered hazardous noise. Vehicular noise would be generated by motor vehicles and heavy-duty construction equipment. Heavy equipment use tends to be the noisiest phase of project activities, including such activities

as backhoes putting debris into waste load-off bins, grading the land and picking up and disposing of materials. Workers in areas where noise levels would exceed permissible noise exposures defined in 29 CFR 1910.95, *Occupational Noise Exposure*, would be required to wear hearing protection. In addition, signs are posted to alert workers and bystanders present in these areas.

The area impacted by noise generation would be different with each project. Incidental or potentially hazardous noise exposure could be experienced by pedestrians, nearby residents, and workers in areas that are more populated with sensitive individuals; e.g., near Military Family Housing, dormitories, schools, Child Development Centers, the Community Health Clinic and chapels.

Other projects could occur near the flightline and the noise generated by flightline activities may impede workers ability to hear. Noise levels resulting from demolition activities are not expected to exceed those encountered along the flightline during normal flight operations. The degree to which construction workers are impacted by this type of noise would depend on the location of the project and the length of time they are exposed to the noise source.

Bioenvironmental Engineering is responsible for conducting hazardous noise surveillance to determine if military, their dependents or DOD civilian personnel working in hazardous noise areas require engineering and administrative controls (including personal protection or potential hazardous noise signage areas). Because of the nature of the proposed activities and the various locations, long-term high-noise levels are not expected to occur.

The measures listed below are required and will reduce any impacts to less than significant levels.

a. All personnel present within hazardous noise areas as stated in AFOSH Standard 48-20, *Occupational Noise and Hearing Conservation Program* (May 2013), shall follow the applicable hearing protection guidelines. This regulation establishes policies, responsibilities, standards and abatement activities to control exposure to noise. This regulation applies to all AF and civilian personnel on AF installations. Non-DOD civilian personnel (contractors) working on the installation are exempt from AFOSH Standard 48-20, but must comply with applicable federal and state regulations.

b. The proponent/contractor shall be responsible for implementing hearing protection measures for their employees.

c. All project vehicles and equipment with internal combustion engines shall be equipped with an appropriate muffler to reduce noise.

d. All project vehicles and equipment shall be maintained IAW their manufacturers' maintenance standards.

e. In areas heavily populated with sensitive individuals, project activities shall be limited to the hours between 0700 and 1700, Monday through Friday, in order to reduce the length of noise exposure to personnel.

f. The proponent/contractor shall notify the adjoining Base population when high-noise levels are anticipated to allow affected facilities the option of planning activities around the time periods to minimize exposure.

g. Facilities scheduled for demolition near schools, residential neighborhoods or health facilities need to be completely fenced to prevent sensitive individuals (i.e., children, elderly, disabled, etc.) from entering the site. Demolition and disposal activities shall be coordinated with the nearby facilities.

4.1.2 Alternative B – Renovate Facility [Adaptive Reuse]

Exterior renovation activities may generate FO if the facility is located near the flightline. Alternative B FO damage and noise impacts and minimization measures are the same as those described in Alternative A. Exterior renovation activities would be substantially less in comparison to a complete demolition.

4.1.3 Alternative C – Stabilize/Mothball Facility

Stabilizing and mothballing a facility will decrease the likelihood that FO would be generated by preventing deterioration (e.g. pieces of the building falling off and being carried by the winds onto the flightline). This alternative would create a positive impact for land use by preventing damage to the land from heavy demolition activities and reducing FO production. Stabilizing and mothballing activities to the exterior of a building would result in the same noise impacts; minimization measures described in Alternative A are required.

4.1.4 Alternative D – No Action Alternative

Unmanaged facilities near the flightline will deteriorate, especially since no major renovations would occur. Thus, hazardous noise would not be an issue. On the other hand, this is likely to result in debris being blown onto the flightline, generating FO. Periodic inspections of the buildings along the flightline are required to remove potential FO damage hazards. When removing FO damage hazards, special care shall be taken to avoid damage/interference with existing ERP wells and treatment systems.

4.2 Air Quality

4.2.1 Alternative A – Demolish Facility (Proposed Action)

Demolition activities would generate criteria pollutants, ozone precursors and hazardous air pollutants from heavy equipment engine exhaust, soil disturbances and unpaved road traffic. Considering the small numbers of heavy equipment and crew required for the proposed action and the fact that low emissions would be spread over a period of three to fifteen months, the potential impacts of engine exhaust on ambient air quality are anticipated to be minimal. Fugitive dust emissions ($PM_{2.5}$ and PM_{10}) are of concern for most construction activities (grading, clearing of areas, etc.), because emissions are released near the ground without any plume rise induced by buoyancy and/or vertical momentum. However, the fugitive dust emissions from demolition activities would not likely exceed the NAAQS or CAAQS. Standard construction practices for demolition, including dust suppression, would reduce impacts to air quality.

Demolition emissions were calculated under the assumption that the buildings on the Edwards AFB Building Disposal Plan were demolished per the Disposal Plan schedule as described in Appendix A. It should be noted, demolition activities in fiscal year 2014 may extend into future years; some of the buildings listed in Appendix A will have been demolished prior to the completion of this EA. With this demolition schedule, the year with the most demolitions, in total square footage, is 2020. For 2020, it has been determined that the relevant air emissions for this action would be 9.33 tons of nitrogen oxides per year and 1.09 tons of volatile organic compounds per year. These air emissions are a result of the construction equipment, debris- transportation and worker trips. Additionally, conservative estimations were made on the selection of emission factors. Table 5 presents a summary of emissions for 2020. Detailed calculations are included in Appendix B. As shown in the table, the estimate emissions are well below Significance Thresholds discussed in Section 3.2.6. The associated HAP emissions are expected to be minimal.

Table 5. Emissions Estimates for FY 2020 (Year with Largest Emissions)

Pollutant	Equipment Emissions and Worker Trips (tpy)	Debris Removal/ Trucking (tpy)	Total (tpy)
VOC	1.07	0.02	1.09
CO	5.25	0.10	5.35
NOX	8.46	0.87	9.33
SOX	0.01	0.00	0.01
PM10	0.4	0.03	0.43
GHG	203.23	83.27	286.50

General Conformity Applicability Analysis

For the proposed action, a General Conformity Applicability Analysis was accomplished in accordance with 40 CFR Subpart B 93.153. Section (c)(1) specifies that the requirements of this subpart shall not apply to Federal actions where the total of direct and indirect emissions are below the emissions levels (*de minimis* thresholds), which were previously specified for NOx and VOCs as precursors to ozone generation. Total direct and indirect air emissions for the proposed action are presented in Table 6.

Table 6. Ozone Precursor Emissions

Year	Number of Buildings to be Demolished	Total Square Footage to be Demolished	NOx (tons/yr)	VOC (tons/yr)
FY14	61	159,936	2	0.2
FY15	20	105,513	1	0.1
FY16	19	58,858	1	0.1
FY20	45	785,516	9	1
Conformity Applicability Threshold for EKAPCD			100	100
Conformity Applicability Threshold for MDAQMD			25	25
Conformity Applicability Threshold for AVAQMD			25	25

The table clearly shows that, even with a conservative estimation, the applicable ozone precursor emissions are well below the conformity threshold levels specified for the EKAPCD Ozone non-attainment area (100 tons per year for both NOx and VOCs) and the MDAQMD and AVAQMD Ozone non-attainment areas (25 tons per year for both NOx and VOCs). Therefore, the project activities described in Chapter 2 would not reach or exceed the *threshold* levels for the criteria pollutants in nonattainment status as documented by the Air Quality Calculations in Appendix B. Thus a conformity determination is not required for the proposed action or alternatives. The Record of Non-applicability is also included in Appendix B.

The proposed action will comply with all applicable federal, state and local laws and regulations and a General Conformity Determination for the proposed action is not applicable. Compliance with the minimization measures listed in Section 4.2.1 will further reduce anticipated effects due to criteria pollutant or ozone precursor pollutant air emissions. Therefore, no significant adverse effects are expected.

HAP emissions would be short-term, occurring only during demolition. It is anticipated that the construction equipment would be in compliance with all applicable California Diesel Regulations for off-road and on-road vehicles, which are aimed at reducing diesel particulate as well as NOx emissions, by requiring the use of cleaner engines. Compliance with all *CAA* Title III, HAP requirements or more stringent state or local requirements, as they apply to stationary sources that emit HAPs, would also be required. For Edwards AFB, the total HAP emissions were 4.352 tons in 2009. Consequently, no adverse HAP-related impacts are expected from the proposed activities.

The following minimization measures are required to reduce any potential air quality impacts to less than significant levels:

a. Future project proponents will contact Environmental Management should more than 50 facilities be scheduled for demolition within a given year to determine if an AF Form 813 and subsequent analysis is required. A *CAA* Conformity Statement and/or air quality analysis would also be required and project-specific minimization measures would be determined at the time of the AF Form 813 submittal.

b. Project activities shall comply with all applicable rules and regulations as identified in AFI 32-7040, *Air Quality Compliance and Resource Management* (2007).

c. The project shall comply with all applicable EKAPCD, MDAQMD or AVAQMD rules and regulations and obtain the necessary air quality permits. Emissions from permitted devices and activities must be tracked and reported to the CARB, the appropriate air district and the U.S. EPA. Air quality permits, if required, shall be coordinated through the Environmental Management Branch. The Environmental Management Branch is the lead agency for the application and maintenance of air quality permits on Edwards AFB. Very few, if any, air quality permits would be required for this project as the majority of emissions will be due to mobile sources. Active air quality permits that may be cancelled as a result of this project may qualify for emission reduction credits (ERCs). ERCs are potentially available from boilers and back-up generators. Banking of ERCs shall be coordinated through the Environmental Management Branch.

d. Any internal combustion engine subject to NESHAP or New Source Performance Standards requirements must be permitted by the local AQMD/APCD. Based on recent revisions to the Reciprocating Internal Combustion Engine NESHAP, all stationary generators are now subject to the regulation regardless of size – this in turn makes them subject to permitting requirements. Permitting is also required (retroactively) for any non-road engine that fails the indicia of portability (i.e. exceeds the 12-month time limit). If such equipment is to remain on base less than 45 calendar days, a written exemption must be obtained from the local air agency.

e. Mobile off-road equipment is subject to the CARB Off-road regulation. On-road equipment is subject to the Truck and Bus regulations. Both these regulations require emission reductions from the affected equipment. It is anticipated that the construction equipment would be in compliance with all the applicable requirements of these regulations, further minimizing emissions.

f. The proposed project shall not discharge from any source whatsoever, such quantities of air contaminants or other material that would: cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public; endanger the comfort, repose, health or safety of any such persons or the public; or cause or have a natural tendency to cause injury or damage to business or property.

g. All earthwork activities shall be planned and conducted to minimize the duration that soils would be left unprotected. The extent of the area of disturbance necessary to accomplish the project shall be minimized. Exposed surfaces shall be periodically sprayed with water.

h. Visible emissions (e.g., dust or smoke) from the proposed projects shall not exceed the limitations as outlined by the local air district.

i. Apply water or dust suppressants to roads and open areas where dust is being generated. If winds produce excessive visible emissions, erect wind barriers.

- Do not grade or till compacted dirt without applying water or dust suppressant.

j. Discontinue grading and other ground-disturbing activities at wind speeds exceeding 25 miles per hour.

k. All vehicles transporting fill material or construction debris shall be covered to reduce $PM_{2.5}$ and PM_{10} emissions during transport.

l. Temporary coverings must be installed over open storage piles.

m. All mechanical and construction equipment shall be kept in good working order according to applicable technical orders and the manufacturer's equipment maintenance manuals to reduce emissions to acceptable levels.

n. Facilities with refrigeration systems that have a refrigerant capacity of more than 50 pounds are required to fix leaks within 14 days of detection. Personnel conducting work on refrigeration units as part of this project must be U.S. EPA certified for the type of equipment they are to work on. Equipment used to recover or service these units must also be U.S. EPA certified. Edwards AFB must also keep on site records of all leak repair work and other servicing of refrigeration systems, including receipts of refrigerant purchases. The contractor shall provide a copy of their U.S. EPA certification and records for service performed on the

equipment, to include leak rates to Environmental Management for inclusion in the base air emission report and HM inventory.

o. The following dust control measures shall be implemented during land preparation, excavation and/or demolition:

- All soil excavated or graded should be sufficiently watered to prevent excessive dust. Watering should occur as needed with complete coverage of disturbed soil areas. Watering should be a minimum of twice daily on unpaved/untreated roads and on disturbed soil areas with active operations.
- All clearing, grading, earth moving and excavation activities should cease during periods of winds greater than 20 miles per hour (mph) (averaged over one hour), if disturbed material is easily windblown or when dust plumes of 20% or greater opacity impact public roads, occupied structures or neighboring property.
- All fine material transported off site should be either sufficiently watered or securely covered to prevent excessive dust.
- All haul trucks should be required to exit the site via an access point where a gravel pad or grizzly has been installed.
- Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.
- Once initial leveling has ceased, all inactive soil areas within the construction site should either be seeded and watered until plant growth is evident, treated with a dust palliative or watered twice daily until soil has sufficiently crusted to prevent fugitive dust emission.
- On-site vehicle speed should be limited to 15 mph.
- All areas with vehicle traffic should be paved, treated with dust palliatives or watered a minimum of twice daily.
- Streets adjacent to the project site should be kept clean and accumulated silt removed.

p. The following measures should be implemented to control construction vehicle tailpipe emissions:

- Properly maintain and tune all internal combustion engine powered equipment;
- Require employees and subcontractors to comply with the ARB idling restrictions for compression ignition engines; and
- Use CARB diesel fuel.

4.2.2 Alternative B – Renovate Facility [Adaptive Reuse]

The renovation of a facility within existing building foundations and existing footprints does not have the potential to significantly affect air quality. If exterior painting occurs, then there may be a concern of releasing VOC into the atmosphere. Indoor air quality is a concern, especially with Base personnel at risk of exposure to poor air quality. Implementation of low VOC and other suitable building practices serves to maintain acceptable indoor air quality. These concerns would be mitigated further by EKAPCD, AVAQMD and MDAQMD regulations that require all coatings comply with VOC requirements of 100 grams/liter of VOC, unless the coating meets the definition

of a specialty coating. All chemicals/materials procured for projects by any means other than the HM Pharmacy, along with their MSDSs, shall be reported to Environmental Management for inclusion in the base air emission report and HM inventory.

Renovation may include upgrades to certain mechanical systems and equipment, such as generators and HVACs. These upgrades are likely to improve air quality by reducing the emissions being emitted. All currently permitted emission sources that require changes to the operational conditions or equipment description must be reevaluated by Environmental Management before any work can begin. All permitting requirements shall be followed in the design, construction and operation of these systems. Measures (l) and (m) included in Section 4.2.1 shall also be followed.

The types of ground disturbance expected when installing underground lines include, but is not limited to, grading and digging. Ground disturbance impacts from installing underground lines would not exceed 50 ft beyond the facility, which would be quite limited when compared to demolishing the entire facility; no significant impacts to air quality would occur. Minimization measures (a) through (m), as described in Alternative A, are required.

4.2.3 Alternative C – Stabilize/Mothball Facility

The impacts for Alternative C would be similar and less than the Alternative B. Some exterior finishing used to stabilize the building may require coatings and thus generate VOC. Vehicular emissions would be very limited and heavy equipment use is not expected to be substantial for this alternative. All permitting requirements shall be followed when correcting any deficiencies associated directly with the buildings structure. Measures (l) and (m) in Section 4.2.1 shall be implemented.

For areas outside of the buildings, there would only be minor ground disturbance (digging and minor vegetation removal) when repairing pipes to prevent leaks and altering site run-off to prevent water from penetrating the building. Ground disturbance would not extend 50 ft beyond the facility, which is a smaller area when compared to the demolition of an entire facility. Should any underground utilities require repairs, the minimization measures (a) through (m) for earthwork activities listed in Section 4.2.1 shall be implemented.

4.2.4 Alternative D – No Action Alternative

There would be no change to air quality if facility demolition does not occur and the building is maintained in its present condition, with minor repairs, if any. Minor repairs are any repairs necessary to ensure personnel safety, such as repairing broken water pipes, gas leaks, etc. Measures (l) and (m) in Section 4.2.1 shall be implemented when conducting any minor repairs.

4.3 Water Resources

4.3.1 Alternative A – Demolish Facility (Proposed Action)

Demolition of existing facilities has the potential to primarily benefit water resources with regard to water quantity and source. There would be no water usage for buildings proposed for

demolition which would benefit the Base by increasing the amount of available water from the water supply sources for use by other Base facilities and missions or reduce water usage.

During facility demolition, a minimal amount of water usage may be required to control dust emissions. However, this amount is not expected to be significant. No minimization measures are required for Alternative A.

4.3.2 Alternative B – Renovate Facility [Adaptive Reuse]

Alternative B renovation and repair activities limited to the interior and exterior building structure would result in no change to water quality and quantity, because the building would remain occupied. No minimization measures are required.

4.3.3 Alternative C – Stabilize/Mothball Facility

Alternative C impacts would be the same as Alternative B.

4.3.4 Alternative D – No Action Alternative

Leaving the building vacant or currently occupied with minor repairs would not alter the water quality or affect the water usage. No minimization measures are required.

4.4 Health and Safety

Protection of workers, occupants and surrounding environments from exposure to asbestos, heavy metals and polychlorinated biphenyls during demolition will be maintained IAW appropriate Federal, State, local and AF laws and regulations. This will reduce any impacts below significant levels for all alternatives. Local requirements include, but are not limited to; Edwards AFB Asbestos Management Plan, Lead Management Plan, Asbestos Operating Plan and applicable asbestos/lead specifications.

4.4.1 Alternative A – Demolish Facility (Proposed Action)

Asbestos Impacts and Minimization Measures: Asbestos Containing Materials (ACM) may be present, regardless of building and material age, in buildings slated for renovation or demolition and disposal. Asbestos is a known human carcinogen and lung disease hazard, and poses a serious health risk to renovation and demolition related personnel, as well as building occupants and the general public. When disturbed, ACM can release fibers that easily become airborne. Once airborne, the aerodynamic shape and density of the fibers enable them to stay airborne for days. Inhalation or ingestion of these tiny asbestos fibers can occur without workers or occupants being aware of their exposure. For project activities, all federal, state and local requirements shall be followed in the removal, abatement and disposal of these materials to ensure exposure is minimized. If the proper procedures are followed during demolition or renovation, it is not anticipated that additional reviews under *NEPA* would be required.

The following minimization measures are required to further reduce any potential impacts during the asbestos removal process:

a. Coordinate previous asbestos surveys, future testing (sampling plans) and abatement and disposal plans with Civil Engineer Asbestos Operations Officer (CE/AOO), Environmental Management Base Asbestos Coordinator (CEV/BAC), and Bioenvironmental Engineering (BEE). All work plans require review and approval by base coordinators listed in this section.

b. Coordinate requirements with CE Project Manager, CE/AOO, CEV/BAC and BEE. All friable asbestos removed for disposal will be transported to a federal EPA and Edwards AFB approved off-Base hazardous waste landfill. All non-friable asbestos removed for disposal would be transported to a federal EPA-approved, off-Base non-hazardous waste landfill.

c. No new ACM shall be used on Edwards AFB.

d. Asbestos abatement work and contractor inspection/survey/monitoring work must be performed by qualified and trained workers as defined in Title 8 CCR Section 1529, *Asbestos*.

e. Contractor inspection/monitoring personnel who perform analysis of Phase Contrast Microscopy asbestos air samples shall be proficient in a national sample testing scheme (such as the American Industrial Hygiene Association Proficiency Analytical Testing program).

f. The contractor shall prepare a site-specific Health and Safety Plan (HASP) prior to disturbing any surfaces. The Contractor shall submit the HASP to 412 CEG/AOO for approval.

Heavy Metals: Lead, Mercury, and Chromium Impacts and Measures: Lead is a cumulative poison that enters the body by inhalation, ingestion or absorption. The optics, digestive and nervous systems can be affected by lead. Lead is considered a threat to human health and the environment if uncontrolled, treated or disposed of improperly. However, impacts from the disturbance of lead-based paint project activities are not considered significant if current Federal and State cleanup and/or lead related construction activity regulations are followed.

Mercury is corrosive to the skin, eyes and mucous membranes. When mercury enters the body, primarily through ingestion, but also through other pathways, mercury acts as a poison, causing severe respiratory damage. Chronic exposure to lower concentrations of mercury can cause central nervous system damage. There is a potential for the stucco, exterior texture coat and interior/exterior paint to contain lead or mercury. Activities associated with building renovation or demolition may cause the release of dust contaminated with these materials into the air. Workers and others in the area of the project are at risk for contact with these materials.

Chromium routes of entry are inhalation, ingestion, eye and skin contact. Certain chromate dusts are severe irritants of the nasopharynx, larynx, lungs and skin. Therefore, any amount of chromium is considered a potential inhalation and ingestion hazard.

Activities associated with demolition would cause the release of dust particles into the air. Dust particles can settle upon the ground and other surfaces and be redistributed. If any of the above-mentioned substances are present in the existing paint on the buildings scheduled for demolition or renovation, workers would be at risk for contact with these substances.

The following minimization measures shall be implemented:

a. Lead-based paint work must be performed by qualified and trained workers as defined in Title 8 CCR Section 1532.1 and Title 29 CFR Part 1926.62 and possibly California Department

of Public Health, Title 17 CCR, Division1, Chapter 8. In addition, the following shall be adhered to (as applicable):

- Title 8 CCR, Section 3203, *Illness and Injury Prevention Program*
- Title 17 CCR, Division1, Chapter 8, *Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards*
- Title 29 CFR Part 1910.1001, *Federal Occupational and Health Standards, Asbestos General Industry (and applicable California OSHA Standards)*
- Title 29 CFR Part 1910.1025, *Federal Occupational and Health Standards, Lead General Industry (and applicable California OSHA Standards)*
- Title 29 CFR Part 1926.62, *Federal Occupational and Health Standards, Lead Construction Industry (and applicable California OSHA Standards)*
- Title 29 CFR Part 1926.1101, *Federal Occupational and Health Standards, Asbestos Construction Industry (and applicable California OSHA Standards)*
- Title 40 CFR, Part 61, Subpart M, *National Emission Standards for Asbestos*
- Section 1017 of the residential Lead-Base Paint Hazardous Reduction Act of 1992 (Title X) *Housing of Urban Development Lead Base Paint Guidelines*
- Hazardous and non-hazardous waste disposal of will use an Edwards AFB and federal EPA-approved, off-Base landfill. Environmental Management will coordinate the signing of all manifests and associated waste shipping papers.

b. The contractor shall submit an Abatement Plan, Disposal Plan and if applicable a Sampling Plan for coordination, review and approval with CE/AOO, CEV/BAC and BEE prior to abatement/remediation/sampling activities. Coordination by the contractor is required to insure proper engineering controls are in place for the removal and disposal. This would include the appropriate LBP testing requirements for waste characterization.

c. The contractor shall prepare and submit a site specific HASP to 412 CEG/AOO prior to disturbing any surfaces.

d. Contractors must be registered with the California Occupational Safety and Health Administration prior to implementing abatement activities.

e. If recycling structural steel involves scraping off chromium paint, coordination with BEE is required for the chromium abatement plan. The purpose of the plan is to ensure the proper engineering controls are in place prior to any activities that would disturb the paint.

f. The proponent/contractor shall coordinate the removal, safe handling, recycling and disposal requirements with CE/AOO, CEV/BAC and BEE to ensure applicable rules/regulations and proper engineering controls are in place prior to any demolition or renovation and associated disposal activities.

Polychlorinated Biphenyls, Mercury from Fluorescent Tubes, and High-Intensity Discharge Lamps Impacts and Minimization: If polychlorinated biphenyl (PCB)-containing equipment is removed or worked on improperly, there is a risk of personnel exposure to PCBs. PCBs are potential carcinogens and may also cause liver damage. Routes of entry into humans

or animals include inhalation, ingestion and absorption. If fluorescent tubes and high-intensity discharge lamps are disposed of in a landfill, mercury and PCBs would contaminate the soil and groundwater.

The following measures are required to further reduce any potential impacts:

a. All buildings scheduled for demolition shall be checked for PCB items and/or contamination before the project begins. Contractors will contact the CE/AOO, CEV/BAC and BEE for information regarding identification and proper means of removal, safe handling and disposal of PCB-contaminated equipment.

b. Equipment, including pre-1980 fluorescent light ballasts and PCB capacitors with PCB greater than 5 parts per million must be disposed of as PCB/PCB-contaminated waste IAW 40 CFR 761 and Title 26 CCR. PCB wastes that are to be disposed of will use an Edwards AFB and federal EPA-approved, off-Base landfill. Environmental Management will coordinate the signing of all manifests and manage the certificates of destruction.

c. Electrical fixtures/ballasts scheduled for removal must be checked for PCBs. If PCBs are identified, remove and dispose of in compliance with Title 22 CCR Division 4.5; 49 CFR Parts 100 to 185; and 40 CFR Parts 750 and 761 (as applicable). PCB materials must be shipped off-site for proper disposal within 30 days of the out of service date. Stockpiling or extended storage of out of service PCB material/waste is prohibited. The proponent/contractor shall coordinate PCB removal, storage and disposal activities with Environmental Management.

d. The contractor shall prepare and submit a site specific HASP to 412 CEG/AOO prior to removing or working on PCB-containing equipment.

e. PCBs and PCB-contaminated equipment shall not be stored on base.

4.4.2 Alternative B – Renovate Facility [Adaptive Reuse]

The DOD has implemented specific safety and occupational health guidelines and procedures and conducts required safety training for all maintenance personnel. Therefore, the likelihood that a significant impact resulting from routine repair and maintenance activities is highly unlikely. Impacts to Health and Safety for facility renovation are similar to those listed in Alternative A. Thus, the minimization measures from Alternative A are required.

4.4.3 Alternative C – Stabilize/Mothball Facility

Unless abatement of the facility is required to stabilize the building, there would be no health and safety impacts under this alternative. If some abatement is required, then Alternative A's impacts and minimization measures are required. In addition, monitoring the condition of asbestos and lead containing materials to ensure hazardous conditions do not develop over time may be required.

4.4.4 Alternative D – No Action Alternative

Dusts and fibers from asbestos; lead-, mercury- and chromium-based paints; and PCBs would remain in existing, underutilized and vacant buildings, presenting a potential health and safety hazard. Many vacant buildings on base are unsecured at the present time and there could

be potential health and safety issues should unauthorized persons enter these buildings and are exposed to asbestos; lead-, mercury- and chromium-based paints; and PCBs. Locking down vacant buildings, building inspections and posting warning signs are likely to discourage unauthorized personnel from entering vacant buildings; thereby, eliminating exposure to hazardous materials. Minimization measures such as locking down to prevent entry to vacant buildings, conducting periodic inspections and posting warning signs are required. Furthermore, monitoring the condition of asbestos and lead containing materials to ensure hazardous conditions do not develop over time, may be required.

4.5 Hazardous Materials and Hazardous Waste

4.5.1 Alternative A – Demolish Facility (Proposed Action)

There is a potential to expose or otherwise affect subsurface hazardous materials (HM) or wastes (HW) from ground disturbing activities and affect HM or HW typically found in facilities. Large amounts of hazardous waste may be removed from a facility before it is demolished. This may depend on the date of construction and condition of the existing facility. The disposal of hazardous waste could result in potential impacts to the environment, as well the health and safety of personnel, if it is not properly handled. Compliance with all applicable Federal, State, and local laws and regulations addressing HW management is required and would ensure proper handling, storage, and disposal of hazardous wastes and would reduce the HW impacts to less than significant.

The following minimization measures are required or recommended to further reduce impacts:

a. The proponent/contractor shall ensure that all hazardous waste management practices comply with all applicable sections of the *Edwards Air Force Base Hazardous Waste Management Plan* (*HWMP*) (2010); AFI 32-7042, *Waste Management* (April 2009); 40 CFR 260-299, *Storage, Treatment, and Disposal of Waste*; and 49 CFR 171-185, *Waste Transportation and Packaging*. The standard operating procedures identified in the EAFB HWMP would prevent the creation of new contamination sites.

b. Proper on-site waste turn-in or off-site disposal includes making a waste determination and characterization (testing if necessary), completing generator/facility waste stream profile sheets and obtaining disposal facility acceptance certifications for each waste stream.

c. Signed hazardous waste disposal manifests and appropriate shipping papers shall be required for all hazardous waste that may be generated on this project prior to transportation for off-site disposal to a Department of Defense, California Department of Toxic Substance Control and/or an Environmental Protection Agency-approved landfill or treatment facility.

d. The proponent/contractor shall submit all facility waste profile sheets, manifests and land disposal restrictions for signature to the Environmental Management Hazardous Material and Waste Program or a properly trained person with Delegation of Signature Authority by the 412th Test Wing Commander.

e. Copies of MSDSs and inventories of hazardous wastes that were disposed of during the course of the contract must be provided to the Environmental Management Hazardous Material

and Waste Program at the conclusion of the contract. The closeout submittal must contain all information required by the initial submittal.

f. Treated construction wood and painted construction wood materials are considered to be hazardous waste until tested or proven by generator knowledge to be non-hazardous. All hazardous and non-hazardous wood materials generated through demolition or renovation must be managed both on-site and during the disposition process IAW potential applicable federal, state (22 CCR, Division 4.5, Chapter 34 and 8 CCR 5194., 5214., 5192.) and local (EAFB *HWMP*) rules and regulations.

4.5.2 Alternative B – Renovate Facility [Adaptive Reuse]

Hazardous material may be used during the renovation of a facility, including paints, solvents, adhesives, sealants and cements. Unless containers holding these materials are empty and dried, substances from such containers can leach from landfills into the soil and the groundwater. Therefore, the containers are also considered hazardous waste. The HM used during renovation and repair activities would not be different from those already used on Base. There is also a potential to expose or otherwise affect subsurface hazardous materials or wastes from ground disturbing activities and affect HM or HW typically found in facilities. The use of hazardous material and disposal of hazardous waste could result in potential impacts to the natural and human environment. Any HM or HW discovered, generated or used during renovation would be disposed of and handled in accordance with the preceding and subsequent minimization measures and applicable local, state and Federal regulations. Therefore, no significant impact would be expected.

The following measures are required to further reduce impacts:

a. The proponent/contractor shall ensure all hazardous materials are authorized and managed in compliance with applicable sections of Edwards AFB Instruction 32-119, *Edwards AFB Installation Hazardous Material Management Program* (*HMMP*), 2010.

b. The proponent/contractor shall ensure that all hazardous waste management practices comply with all applicable sections of the *Edwards Air Force Base Hazardous Waste Management Plan* (*HWMP*) (2010); AFI 32-7042, *Waste Management* (April 2009); 40 CFR 260-299, *Storage, Treatment and Disposal of Waste*; and 49 CFR 171-185, *Waste Transportation and Packaging*. The standard operating procedures identified in the EAFB HWMP would prevent the creation of new contamination sites.

c. If hazardous materials are being transported to or from off-Base locations, the contractor shall have the licensing and training required to properly transport the materials. The contractor shall adhere to 49 CFR, Parts 100-199 and the CCR. These regulations include the use of proper shipping containers, Department of Transportation identification numbers, acceptable shipping papers, shipper certification contents and placarding and labeling of the shipping container and/or the transporting vehicles.

d. Forty-eight hours before arriving on Edwards AFB, the Base Director of Safety shall be alerted of hazardous materials off-loading.

e. IAW 29 CFR 1910.1200, all hazardous materials shall be documented with required MSDSs as part of a complete hazardous materials inventory. A copy of the inventory and all

pertinent MSDSs would be submitted to Bioenvironmental Engineering IAW EAFB *HMMP* and/or applicable procedures.

f. The MSDS for each hazardous material used at the construction site must be present during the proposed project activities.

g. All spills or releases of hazardous materials or hazardous wastes that occur during these activities (regardless of quantity or location of spill) must be reported immediately to Environmental Management. Cleanup of spilled HM/HW are the responsibility of the party who spilled it.

h. The contractor/proponent shall conduct a site investigation in project areas where hazardous materials are suspected or known to be existing on or adjacent to the proposed project area. The contractor/proponent shall coordinate with state and local agencies and U.S. EPA, on any findings, as appropriate, with results documented in the project's administrative record.

i. Mercury can be found in high-intensity discharge lamps, fluorescent lamps, mercury vapor lamps, switches, thermostats, etc. The introduction of mercury-containing materials on Edwards AFB shall be minimized when possible and substituted with more environmentally friendly products. Mercury-containing materials are managed as hazardous and universal wastes.

4.5.3 Alternative C – Stabilize/Mothball Facility

The level of impact would be determined based on the amount of repair required to stabilize, weatherproof and secure the facility. The impacts for Alternative C would be similar to Alternative B, but to a lesser degree. The minimization measures listed in Alternative B are required.

4.5.4 Alternative D – No Action Alternative

If facility demolition does not occur and the building is vacant or maintained as is, with only minor repairs to keep operable, no significant impacts to the waste-stream are anticipated. Similar, although reduced, impacts may occur and require measures as discussed under Alternative B due to minor repairs dealing with HM/HW (e.g. limited sealant projects). Alternative B minimization measures shall be implemented.

4.6 Solid Waste

4.6.1 Alternative A – Demolish Facility (Proposed Action)

AFI 32-7042, *Waste Management* (April 2009), sets forth guidelines to reduce the solid waste-streams. The construction and demolition debris generated from project activities that is not able to be diverted (recycled or reused) from the waste stream, would be disposed of at an approved, off-base, state-licensed landfill; ensuring minimal impacts to the Main Base Active Landfill. Trash dumpsters or roll-off bins may be used to store the solid waste before it is recycled or disposed. Unprocessed inert debris (e.g., asphalt or concrete) may be stored on Edwards AFB for up to six months or at the construction site as long as construction is on-going. Once processed, the material must be reused or removed from the processing location to a government designated storage area within 18 months. Processed material may be reused as base

material either for the same project or one in the future. Inert debris is not allowed to be disposed of, but may be recycled at the construction site or at an approved, state-licensed facility. Funding to cover the cost of all processing and transportation to an approved storage area must be provided if inert debris is to be processed at the Main Base Active Landfill processing area. All processing of inert debris at the Main Base Active Landfill is coordinated through the 412 CEG/CEO. Recycling and reusing inert debris would reduce the amount of solid waste discarded into landfills, resulting in an incrementally positive impact to solid waste management. No significant adverse impact to the on-base or off-base solid waste management program would be expected.

The following minimization measures are required to further reduce impacts:

a. The contractor must comply with all applicable federal, state, county, local and AF regulations.

b. The proponent/contractor shall ensure that all solid waste management on this project complies with all applicable sections of AFI 32-7042, *Waste Management* (April 2009).

c. The Environmental Management Branch shall be contacted for information on solid waste disposal, reuse, the segregation of recyclables and recycling permit issues.

d. Arrangements for use of on-base disposal, storage and recovery facilities shall be predetermined by contractual agreement with the base Contracting Officer with review by the Environmental Management Integrated Solid Waste Manager and the Civil Engineering Landfill/ QRP Manager.

e. The contractor shall furnish the following information to the Contracting Officer:

- Name and address of the proposed landfill to be used for disposal of project related waste,
- Landfill class, and
- Proposed materials to be disposed of at this location.

This information is to be submitted for all materials to be disposed of by the contractor, including hazardous waste as well as demolition debris, and will be submitted and approved before construction work begins.

f. The disposal of solid waste and recyclables shall be coordinated with the Integrated Solid Waste Manager to determine disposition of the waste-stream. The solid waste may be recycled, reused or transported to an off-base, state-licensed facility and is the responsibility of the proponent/contractor as required in construction contracts.

g. If any waste material is dumped in unauthorized areas, the contractor shall remove the material and restore the area to the condition of the adjacent undisturbed area.

h. The proponent/contractor shall ensure that all recycling on this project complies with all applicable sections of AFI 32-7001, *Environmental Management* (November 2011) and *U.S. Air Force Qualified Recycling Program (QRP) Guide* (September 2010).

i. The contractor is responsible for developing a recycling/diversion plan and implementing a recycling/reuse effort to divert excess material during project activities. This plan needs to be submitted to the Integrated Solid Waste Manager for review prior to contract accomplishment.

j. Recyclable materials shall be segregated onsite and then taken to the appropriate on-base or off-base recycling/recovery facility, unless such material is to be reused at the project site or some other on-base location. The proponent/contractor shall remove all hazardous materials from scrap metal and other materials being recycled prior to sending the materials to the Base Qualified Recycling Program. Pickup can be coordinated with the Base Qualified Recycling Program Manager.

k. Quarterly reports of the total amounts of waste disposed of in landfills and materials recycled and/or diverted, including green waste and inert debris, are required and shall be submitted to the Integrated Solid Waste Manager and the QRP Manager, as well as to the Contracting Officer at the end of each quarter. All disposal costs, recycling costs and recycling earnings and proceeds, either as direct or contract costs, shall be included as a part of the quarterly waste disposal and diversion reports.

l. The proponent/contractor shall be responsible for collection, transportation and disposal or recycling of Inert Debris to include waste concrete, asphalt and concrete rinsate generated from project activities. These materials shall be collected in a designated area within the project work site. At project completion, Inert Debris must be removed from the project site, concrete rinsate must be dry and all residues shall be removed from the project site. Disposal of Inert Debris will be in an approved Base Inert Debris processing location or Off-Base Landfill.

4.6.2 Alternative B – Renovate Facility [Adaptive Reuse]

Edwards AFB requires use of environmentally preferable products and services where possible. Environmentally preferable products and services are those which have a reduced impact on human health and the environment. Federal agencies are required to procure environmentally preferable products and services in support of markets for recycled materials and products containing recycled materials.

Repairs and renovations have the potential to generate solid waste through removal of structural and finish building components. Reuse and recycling of solid waste will reduce the impact associated with disposal of wastes generated during construction. Minimization measures listed in Alternative A shall be implemented for Alternative B.

4.6.3 Alternative C – Stabilize/Mothball Facility

The impacts for Alternative C would be similar to Alternative B, but to a much lesser degree. The level of impact would be determined based on the amount of repair required to stabilize, weatherproof and secure the facility. The minimization measures listed under Alternative A shall be implemented for this alternative.

4.6.4 Alternative D – No Action Alternative

There would be very minimal amounts of solid waste generated if facility demolition does not occur and the building is vacant or maintained. Solid waste generated from minor repairs in occupied facilities, including changing out light bulbs and air filters, would be negligible. The same procedures and minimization measures listed for solid waste in Alternative A shall be implemented.

4.7 Biological Resources

4.7.1 Alternative A – Demolish Facility (Proposed Action)

Ground-disturbing and demolition activities have the potential to impact animal species, including the desert tortoise, bats, other non-ground dwelling birds and ground-nesting birds. This is less of an issue for tortoises in developed areas because the area is already disturbed and tortoises tend to avoid these areas; however, some ground-nesting birds, such as burrowing owls, often prefer nesting in debris piles, storm water drains, open pipes and ground squirrel burrows in disturbed areas. Some non-ground dwelling birds prefer to create nests on or in buildings. Additionally, a few bat species may roost in vacant buildings.

Project activities in the more remote areas of Edwards AFB have a higher possibility of impacting sensitive plant and animal species. Desert tortoises are more likely to be harmed in remote, minimally disturbed, areas because they are often found on roads not well traveled. Remote areas comprising about 60,800 acres on the eastern portion of Edwards AFB are designated as critical habitat for the desert tortoise and the likelihood of occurrence increases in critical habitat. Direct impacts to tortoises may include unintentional injuries and mortalities from construction vehicles traveling on improved, but mostly unimproved roads in remote areas. Permanent loss of habitat (mostly equipment and vehicle staging areas) is expected to be minimal surrounding any buildings scheduled for demolition.

Specifically, vehicles and equipment on wheels or trailers may injure or kill an individual tortoise. Desert tortoises may take shelter under parked vehicles/equipment and be crushed when the vehicle/equipment moves. Desert tortoises may get trapped, injured and/or killed falling into steep-sided excavations or upon entering uncapped pipes; this is more likely to happen in the developed areas, such as Main Base or Housing. Garbage from the project activities could attract the common raven (*Corvus corax*), a known desert tortoise predator and other predators such as coyotes and feral dogs. Project activities (e.g., grading of shoulders and drainage ditches, etc.) could crush burrows, resulting in burrow collapse, which may, if occupied, expose a desert tortoise to predation or entombment. Desert tortoises may leave their burrows as a result of the vibrations or noise associated with project activities making them more likely to be exposed to temperature extremes, predation or relocation by personnel working on the project. Tortoise injury or mortality may occur when unauthorized personnel handle or relocate tortoises in the work area. Mortality may also occur by releasing them into unsuitable habitat and no nearby burrow to retreat into for safety and exposure to extreme temperatures.

Grading activities also have the potential to spread noxious weeds and invasive or exotic plants. The spread of these species (such as barbwire Russian thistle [*Salsola paulsenii*], western ragweed [*Ambrosia acanthicarpa]* and African rue [*Peganum harmala]* can lead to habitat degradation, fire hazards and detrimental ecological impacts that would further reduce the quality of the surrounding habitat for native plant and animal species.

The following measures are required to minimize potential impacts to biological resources associated with the facility, to include the 50 ft buffer surrounding the associated facility:

a. If a proposed demolition project extends 50 ft beyond the facility, an additional survey and analysis will be required. The proponent shall contact Environmental Management should the 50 ft buffer be exceeded.

b. The proponent/contractor must follow the Terms and Conditions of the applicable biological opinions and all applicable laws and regulations. Biological opinions for base operations are with the Environmental Management Office.

c. At the time specific road or parking lot project areas have been identified and contractor staging areas are determined, the contractor shall contact the Environmental Management Office to determine if any federal- or state-protected species exist in the proposed project staging areas.

d. A bat presurvey is required. Contact Environmental Management no less than 3 days and no more than 5 days before the start of the project, including abatement activities, to schedule a bat presurvey. If at-risk/sensitive or listed species of bats are observed, passive exclusion methods will be required. Consult with Environmental Management if passive exclusion methods are deemed necessary.

1. If a building is found to support a maternity colony, the proponent/contractor shall make every effort to avoid demolition during the breeding season.

2. If buildings scheduled for demolition contain a significant proportion of occupied bat habitat, alternative artificial roosts would be considered for replacement of habitat.

e. If threatened or endangered wildlife or an active bat roost is found at the project site, the project sponsor and/or contractor shall immediately suspend operations in the area of discovery and notify the Environmental Management Office. Construction operations can continue in other areas of the project unless otherwise directed by the Environmental Management Office.

f. Desert tortoise minimization measures:

1. All project personnel shall complete a desert tortoise awareness briefing that defines their responsibilities and liabilities under the *ESA* conducted by Environmental Management. Training shall be scheduled by contacting the Natural Resources Coordinator at least 3 days before the start of the project. A 30-day advanced notice is needed to schedule briefings, preactivity surveys and guidance on monitoring instructions for a contractor's biologist.

2. Preactivity surveys shall be conducted in areas of known desert tortoise habitat by authorized biologists as determined by the base wildlife biologist. If monitoring is deemed necessary by the base biologist, the monitor shall be available to ensure compliance with any minimization measures and subsequent terms and conditions of the biological opinions.

3. Desert tortoises found aboveground within the project area shall be moved out of harm's way by an authorized biologist in accordance with *Guidelines for Handling Desert Tortoises During Construction Projects* (USFWS, 1994b). If a desert tortoise is discovered within the project site, the contractor shall immediately cease work in that specific area until an authorized biologist can relocate the tortoise.

4. If a desert tortoise burrow is encountered within the project area, the burrow shall be avoided to the maximum extent feasible. If avoidance is not possible, an authorized biologist shall excavate the burrow in accordance with *Guidelines for Handling Desert Tortoises during Construction Projects* (USFWS, 1994b).

5. Open excavations created during project activities shall be secured at the end of each day by backfilling, placing a cover over the excavation, installing temporary desert tortoise fencing and/or creating a 3:1 slope at each end of the trench to facilitate escape of trapped wildlife. An inspection for trapped wildlife shall be made prior to backfilling.

6. Excavations left unsecured during the workday shall be checked three times per day (morning, midday and late afternoon) for trapped animals. If any wildlife is found in an excavation, the Environmental Management Office shall be notified immediately.

7. Road berms must have a 3:1 slope or less.

8. All project personnel working in open areas shall inspect under all vehicles and equipment for desert tortoises and other wildlife species prior to operation. If a tortoise is present, the vehicle shall not be moved and Environmental Management shall be notified immediately so that the desert tortoise can be moved to a safe area by a qualified biologist.

9. Construction areas shall be clearly fenced, marked or flagged at the outer boundaries to define the limits of work activities. All workers shall be instructed to confine their activities to within the marked areas.

10. Laydown, parking and staging areas shall be restricted to previously disturbed areas to the maximum extent possible.

11. Project personnel shall remain on existing roads and use previously disturbed areas to store and stage equipment and materials. If this is not possible in the project area, an authorized biologist shall survey and approve the route to be traveled. Equipment and vehicle operators shall be alert for desert tortoises and other wildlife in and along access routes.

12. Off-road driving is prohibited unless preauthorized by Environmental Management Office or for medical emergencies. If off-road driving is approved, all desert tortoise burrows shall be avoided. When traveling off-road, speed limits shall not exceed 5 mph and shrubs shall be avoided as much as possible.

13. Speed limits on existing dirt roads within the project area shall be less than 20 mph.

14. All trash shall be placed in raven-proof receptacles for proper disposal to reduce the attractiveness of desert tortoise predators (i.e., coyotes and common ravens).

15. At no time shall project personnel or visitors touch, move, harass, harm or kill any desert tortoise. Workers and visitors shall immediately report all desert tortoise sightings to the Environmental Management Office.

16. Prior to commencement of work activities at approved borrow sites, the proponent/contractor shall specifically establish approved locations, perimeters and dimensions of the approved site. To establish these coordinates, the contractor shall consult with Environmental Management to identify specific environmental issues including, but not limited to, endangered species, threatened species and sensitive species.

17. Revegetation/restoration will be required based on the applicable Biological Opinion and/or the level of proposed disturbance from project activities. Revegetation/restoration of the disturbed site shall be IAW the *Edwards Air Force Base, California Revegetation Plan, AFFTC (December 1994)*. Coordinate with the Environmental Management Office for requirements.

g. Migratory bird minimization measures:

1. If possible, repair work should occur outside of the bird nesting season (February to August). If repair work cannot occur outside of the nesting season and an active nest/burrow is

present, a depredation permit from the USFWS must be obtained prior to disturbing the nest and young. Contact the Environmental Management Office for guidance.

2. The proponent/contractor shall be responsible for complying with the requirements of the *Migratory Bird Treaty Act* (MBTA). Contact Environmental Management for guidance.

3. The contractor shall employ the services of a biologist if the contractor plans to demolish, renovate or repair buildings/facilities during nesting season (1 February – 30 August).

4. The contracted biologist shall develop a migratory bird survey and monitoring plan for demolition, renovation or repair activities for the contractor that includes all related work activities that may potentially harm/harass migratory birds or their active nests. The plan shall reference the MBTA, include bird surveys, when surveys are to be conducted, data sheet showing what data to be recorded, handling of inactive nests, avoidance measures, protection measures, monitoring and results to be documented in an annual monitoring report. This plan shall be submitted to Environmental Management for comments and approval at least 30 days prior to beginning demolition, renovation or repair activities. The contractor shall submit a final plan to Environmental Management following incorporation of comments no later than 10 days prior to beginning demolition, renovation or repair activities.

5. The contractor shall submit an annual monitoring report based on the requirements of the migratory bird survey and monitoring plan to Environmental Management 30 days following the end of the nesting season or 30 days following the end of demolition, renovation or repair activities in a given year.

6. Contact the Environmental Management Office if an active bird nest (i.e., nest with eggs, unfledged birds or adult birds observed in the nest), or a burrowing owl burrow is found within the project area and cannot be avoided.

7. If there will be a delay in time between the abatement and demolition of a building, it is imperative that everything (i.e., windows, overhangs, holes, etc.) is sealed off to prevent birds from nesting. If nests are found, building demolition will be postponed until the nest has been vacated. Contact the Environmental Management Office for guidance.

h. Plant minimization measures:

1. Contact Environmental Management at least 3 days prior to ground disturbance for assistance in developing measures to avoid adverse impacts to sensitive plant species.

2. The contractor shall minimize the spread of noxious weeds and invasive or exotic plants in the project area, contact the Environmental Management Office for guidance. Such minimization measures shall include using base borrow pit material or borrow material that is sterile or weed-free and include:

i. Scraping/grading the roadsides before tumbleweeds and ragweed flower in the fall.

ii. Application of herbicides and pesticides shall follow the recommendations and standards set forth in AFI 32-1053 and the Edwards AFB Installation Pest Management Plan.

4.7.2 Alternative B – Renovate Facility [Adaptive Reuse]

Minor repairs or renovations that occur on the exterior of the buildings structure have the potential to impact migratory birds; therefore the minimization measures listed under (i) of Alternative A shall be implemented.

Any ground disturbance activities, such as grading or digging for the repair or installation of utilities, will have the same impacts as Alternative A. The minimization measures listed under Alternative A shall be implemented for any ground disturbing activities.

4.7.3 Alternative C – Stabilize/Mothball Facility

The impacts for Alternative C would be similar to Alternative B, but typically to a lesser extent. The level of impact is expected to be less based on the amount of repair required to stabilize, weatherproof and secure the facility. Thus, the minimization measures listed under (f) of Alternative A shall be implemented. In addition, all Alternative A minimization measures shall be required for any ground disturbance activities (e.g. trenching, digging, etc.).

4.7.4 Alternative D – No Action Alternative

If facility demolition does not occur and the building is vacant or maintained as is, with only minor repairs to keep it operable, no significant impacts to biological resources are anticipated. Repairs limited to the buildings structure (e.g. roof repair, limited sealant projects, etc.) shall adhere to minimization measures listed under (f) of Alternative A. Ground disturbance repairs (e.g. water pipe leaks, underground cable repair, etc.) shall follow all Alternative A minimization measures.

4.8 Cultural Resources

4.8.1 Alternative A – Demolish Facility (Proposed Action)

Any proposed demolition affecting a facility that has been evaluated and found ineligible to the NRHP has no potential to adversely affect historic properties under Section 106 review of the NHPA. Proposed demolitions of facilities that are eligible to or listed on the NRHP have the potential to adversely affect historic properties, whether individually eligible or as a contributing element to an eligible district. Those facilities that remain unevaluated and have reached maturity (50 years of age) are treated as eligible to the NRHP, until evaluated and determined otherwise.

Upon determining that a proposed demolition will affect a historic property, Edwards AFB shall consider alternatives to the adverse activity. If the adverse impact is not avoidable, the SHPO shall be immediately notified and consultation begun towards an agreement of acceptable mitigating treatment(s). The ACHP shall be notified of the undertaking and invited to participate in the consultation with the SHPO. The negotiation process and approval of a memorandum of agreement (MOA) is typically lengthy and will be considered in the cost and scheduling of the project. Execution of any stipulated treatments generally needs to occur prior to demolition and can increase project cost and time delays. Appendix A lists the facilities proposed for demolition, their eligibility status to the NRHP, need or status of an MOA, and whether minimization will be required or has been conducted in the form of documentation that meets the National Park Service's Historic American Engineering Record standards.

The demolition of multiple facilities that contribute to an eligible historic district has a secondary adverse impact on the district's integrity. Consultation with the SHPO is imperative in determining the threshold at which loss of historic fabric would threaten the integrity of the district and, subsequently, the district's eligibility to the NRHP. The list of proposed demolitions

includes 41 facilities that contribute to the eligible Jet Propulsion Laboratory Complex historic district. This adverse impact resulting from these demolitions, coupled with previous demolitions within the district, will reduce the contributing elements by over 70 percent of their original number and eliminate all test stands associated with the program. This magnifies the finding of adverse effect and shall be considered in consultation with the SHPO in reaching an agreement of acceptable mitigating treatment(s).

Inadvertent discovery of cultural resources may occur during execution of a demolition, whether the facility is eligible to the NRHP or not. Standard operating procedures (SOP) for inadvertent discovery of cultural resources can be found in the ICRMP, addressing roles, responsibilities and process requirements. Project managers, contractors and subcontractors will be provided with a copy of these SOPs prior to the onset of work.

4.8.2 Alternative B – Renovate Facility [Adaptive Reuse]

Renovation of a facility that has been evaluated and found ineligible to the NRHP will likely be determined to have no potential to adversely affect historic properties under Section 106 review of the NHPA. Renovation of facilities that are eligible to or listed on the NRHP has the potential to adversely affect historic properties, whether individually eligible or as a contributing element to an eligible district. Those facilities that remain unevaluated and have reached maturity (50 years of age) are treated as eligible to the NRHP, until evaluated and determined otherwise.

During the Section 106 review process for renovating an eligible facility, several factors must be considered in determining whether the activity has the potential for adverse effect. Character defining elements must be identified and considered in the design solution. In order to minimize effects, the Secretary of Interior's *Standards for Treatment of Historic Properties* and *Guidelines for Rehabilitation* shall be applied during the planning, design and construction administration phases of a renovation to an eligible facility. If it is determined that an adverse effect to a character-defining element of a historic property cannot be avoided, the SHPO shall be immediately notified and consultation begun towards an agreement of acceptable mitigating treatment(s). The ACHP shall be notified of the undertaking and invited to participate in the consultation with the SHPO. The negotiation process and approval of a MOA is typically lengthy and will be considered in the cost and scheduling of the project. Stipulated treatments generally need to be carried out prior to execution of any construction (or associated demolition) and can increase project cost and time delays.

Inadvertent discovery of cultural resources may occur during execution of site work associated with a renovation, whether the facility is eligible to the NRHP or not. SOP for inadvertent discovery of cultural resources can be found in the ICRMP, addressing roles, responsibilities and process requirements. Project managers, contractors and subcontractors will be provided with a copy of these SOPs prior to onset of work.

4.8.3 Alternative C – Stabilize/Mothball Facility

Stabilizing/Mothballing of a facility that has been evaluated and found ineligible to the NRHP will likely be determined to have no potential to adversely affect historic properties under Section 106 review of the NHPA. Stabilizing/Mothballing of facilities that are eligible to or listed on the NRHP has the potential to adversely affect historic properties, whether individually

eligible or as a contributing element to an eligible district. Those facilities that remain unevaluated and have reached maturity (50 years of age) are treated as eligible to the NRHP, until evaluated and determined otherwise.

During the Section 106 review process for stabilizing/mothballing of an eligible facility, the level of effort needed to stabilize the facility will require consideration. In order to minimize effects, the Secretary of Interior's *Standards for Treatment of Historic Properties* and *Guidelines for Rehabilitation* shall be applied during the planning, design and construction administration phases of all treatments required to stabilize an eligible facility. If it is determined that an adverse effect cannot be avoided, the SHPO shall be immediately notified and consultation begun towards an agreement of acceptable mitigating treatment(s). The ACHP shall be notified of the undertaking and invited to participate in the consultation with the SHPO. The negotiation process and approval of a MOA is typically lengthy and will be considered in the cost and scheduling of the project. Stipulated treatments generally need to be carried out prior to execution of any construction (or associated demolition) and can increase project cost and time delays. See Appendix A for a list and location of eligible facilities that will require application of the Secretary of Interior's Standards in order to avoid impacts.

Inadvertent discovery of cultural resources may occur during the execution of site work associated with stabilization, whether the facility is eligible to the NRHP or not. SOP for inadvertent discovery of cultural resources can be found in the ICRMP, addressing roles, responsibilities and process requirements. Project managers, contractors and subcontractors will be provided with a copy of these SOPs prior to onset of work.

4.8.4 Alternative D – No Action Alternative

The no action alternative equates to continuation of the current management for each facility on the list slated for demolition. The management of these facilities varies, as some are currently occupied, others have been vacant and are being maintained, while a fair amount have been vacant for many years and effectively neglected. Subsequently, those facilities that are eligible to the NRHP and would continue, under Alternative D, to undergo tenant improvement as they remain occupied are subject to the impacts and need for minimization described under Alternative B. Those eligible facilities that have been well maintained and are stable would be subject to the impacts and need for minimization described under Alternative C. Finally, those eligible facilities that have been in a state of neglect and are currently undergoing accelerated deterioration are facing demolition by neglect. These latter facilities are subject to the adverse impacts and need for minimization described under Alternative A.

4.9 Geology and Soils

4.9.1 Alternative A – Demolish Facility (Proposed Action)

Clearing and vegetation removal makes soils more vulnerable to erosion. Soil erosion/loss would occur directly from disturbance or indirectly via wind or water. Adherence to the minimization measures listed below is required to reduce soil degradation concerns below significant levels:

a. If demolition activities are greater than one acre, the project would then require a site-specific stormwater pollution prevention plan per AFI 32-7041, *Water Quality Compliance;* the

proponent/contractor shall develop a site specific SWPPP to ensure that non-stormwater runoff is contained and prevented from entering the wastewater system, as required by the National Pollutant Discharge Elimination System (NPDES) Permit in compliance with the *Clean Water Act*. This site specific plan shall include the identification of stormwater discharge points, nearby permit outfalls that receive stormwater from the project site and conveyances that serve these outfalls and site-specific measures to mitigate stormwater contamination.

b. The overall design objective for each demolition project is to maintain predevelopment hydrology and prevent any net increase in stormwater runoff. DoD defines "predevelopment hydrology" as the pre-project hydrologic conditions of temperature, rate, volume and duration of stormwater flow from the project site. The analysis of the predevelopment hydrology must include site-specific factors (such as soil type, ground cover and ground slope) and use modeling or other recognized tools to establish the design objective for the water volume to be managed from the project site.

c. As necessary during the rainy season, activities shall utilize sandbags to protect downstream facilities from potential stormwater runoff and eroded soils diverted or generated by the project.

d. Implement Best Management Practices, such as developing and implementing an erosion and sedimentation control plan, re-vegetating disturbed soils and maintaining site soil stockpiles, to prevent soils from eroding and dispersing off-site.

e. The project area shall be defined and the boundaries shall be clearly marked.

f. The area of disturbance necessary to accomplish the project shall be minimized to the greatest extent possible.

g. Disturbed soils shall be stabilized upon completion of project activities (e.g. backfilling with fill material, revegetation, capped and covered).

4.9.1.1 Fill Material

Grading and other earthwork activities required to remove building foundations and demolition debris may impact predevelopment hydrology resulting in an increase of stormwater runoff. Fill material would be required to backfill the soil to existing surrounding elevation and grade the site to 90% compaction. Potential environmental impacts associated with geology and soils, for the use of on-base fill material were analyzed in the *Environmental Assessment for Borrow Sites at Edwards Air Force Base, California* (AFFTC, 1996; recertified in 2002), and is incorporated by reference. The following minimization measures are required to reduce geology and soil impacts below significant levels:

a. Fill material shall be obtained from approved on-base borrow sites.

b. Prior to commencement of work activities at approved on-Base borrow sites, the proponent/contractor shall specifically establish approved locations, perimeters and dimensions of the approved site. To establish these coordinates, the contractor shall consult with Environmental Management to identify specific environmental issues including, but not limited to, natural resources, cultural resources, and ERP concerns.

c. All fill material shall be delivered according to applicable federal, state and local regulations regarding transport of fill material.

d. The amount of fill material based on ground disturbance has been reached at Borrow Sites 15, 17, 18 and 20 in accordance with the *Environmental Assessment for Borrow Sites at Edwards Air Force Base, California*. Borrow Sites 1, 21, 23 and 28 have never been used are currently being considered to remain permanently inactive. The Landfill Borrow Site is designated to provide cover material for the Main Base Active Landfill. Therefore borrow material can only be used from Borrow Sites 5, 16 and Main Base Borrow Site. The contractor shall notify the Civil Engineering Contract Management Office and/or the Civil Engineering Heavy Repair Office of the requirement for fill material prior to its removal.

4.9.1.2 Environmental Restoration Program

Demolition activities (i.e. grading, trenching and digging up foundations) may disturb existing ERP sites. Contaminated soils may be encountered in and around buildings scheduled for demolition. Heavy operating equipment and vehicles may disturb or expose contaminated soil during digging operations.

Because some ERP sites require long-term remediation, field equipment such as extraction and monitoring wells, treatment systems and associated piping must remain undisturbed and must be avoided whenever possible. *Monitoring wells, which are often completely flush with the ground surface with only a simple metal cover, are the most vulnerable to site grading and demolition activities.* The Geographic Information System (GIS) at Edwards AFB has the most current status of open and closed sites, location of monitoring and extraction wells and what Land Use Controls are in place, if any. Although more than four hundred sites have been cleaned up or otherwise addressed, about sixty active sites remain, so the current status of each area has not been evaluated individually in this document. Instead, each new proposed activity will require a site-specific evaluation, which will occur when the project is submitted to the Environmental Management office using the AF Form 813, *Request for Environmental Impact Analysis*. The following minimization measures are required for projects occurring near or on ERP sites.

a. Prior to the onset of any ground-disturbing activity in close proximity to ERP monitoring wells and remediation equipment, the proponent/contractor shall contact the AFCEC Installation Support Team EAFB (AFCEC/CZO) for location of ERP equipment. Damage to ERP equipment shall be avoided.

b. All work of a hazardous nature requires the completion of a notification plan (Health and Safety Plan) that must be approved by the contract administrator and coordinated through Bioenvironmental Engineering and Ground Safety at least 10 working days prior to commencement of project activities. The notification plan shall be made available to residents and employees and shall provide a method to notify individuals in the area of any hazards that may occur. The plan must describe the hazards and duration of the proposed activity. The contractor would provide temporary signs showing the hazards involved with the activity. If an emergency develops, occupants must be alerted as soon as possible. This can be accomplished by calling 911 from a landline to alert the Security Police.

c. Field detection equipment shall be used in areas of concern to the ERP. All contaminated soil shall be treated as hazardous waste, as determined by Environmental Management's requirements.

d. Should the proponent/contractor notice soil discoloration and/or odors during project activities, they shall report this observation immediately to Bioenvironmental Engineering and the Environmental Management Restoration Section.

e. Contaminated soil must be containerized and sampled. Containers can be left on site if proper labeling instructions are followed. The soil must be sampled prior to an application for a discharge permit or shipping the waste off-site for disposal. The proponent/contractor shall have all documentation, disposal facility profiles and shipping papers reviewed by the Environmental Management Hazardous Waste staff prior to shipment of the waste.

f. Any construction proposed on the sites identified as having ERP concerns would require close coordination between the contractor and the base AFCEC Installation Support Team EAFB (AFCEC/CZO) ERP personnel. This will ensure that ERP investigation activities are allowed to continue as required and that current and planned cleanup operations are not impacted. No significant impact is anticipated to the ERP sites.

g. An AFFTC IMT 5926, *Edwards AFB Civil Engineering Work Clearance Request* (digging permit) will be required. The proponent/contractor shall coordinate the digging permit. Contact the Base Civil Engineer Infrastructure Controller (412 CEG/CEOI) at (661) 277-1530 for specific requirements.

4.9.2 Alternative B – Renovate Facility [Adaptive Reuse]

The renovation of facilities on Edwards AFB within existing facility foundations and existing footprints does not have the potential to affect geology. However, renovation activities that extend beyond the existing foundation of a facility may have minor, short-term impacts to the groundwater as described in Alternative A, but to a lesser extent. These impacts may occur during renovation activities (i.e. repair of underground utilities, etc.) due to soil erosion or disruption of the existing hydrological flow. The minimization measures listed in Alternative A shall be followed when conducting any ground disturbing activities.

The building or the connecting utilities may be located on an active ERP site. Renovation projects will be evaluated by Environmental Management to determine if it is within an ERP site or area of concern. The likelihood of Alternative B's activities reaching and/or disturbing an ERP site's contaminated soil or groundwater is minimal. The biggest area of concern is ERP equipment, typically consisting of flush mounted ERP wells, abutting the building. To avoid any impacts to ERP sites, the measures in section 4.9.1.2 are required.

4.9.3 Alternative C – Stabilize/Mothball Facility

The only possible impact under Alternative C would be to ERP equipment that is directly adjacent to the proposed facility. To avoid any impacts to ERP equipment, the proponent and/or contractor shall adhere to minimization measure (1) in 4.9.1.2.

4.9.4 Alternative D – No Action Alternative

If facility demolition does not occur and the building is occupied and maintained with only minor repairs to keep operable, there would be no impact to existing ERP sites and fill material is not required. If the facility is vacant, properly managed with necessary utilities kept on to maintain

the infrastructure (e.g. piping from getting too hot or cold) and periodic monitoring, then there should be no impacts to existing ERP sites. However, soil erosion/loss may occur with the lack of management to the exterior of a facility. The gutters, downspouts and drainage system at the facility may start to break down and cause stormwater runoff issues; a direct violation of the Edwards AFB *SWPPP*. These impacts would be minimized by adhering to the *SWPPP*, which requires a properly sustained base drainage system utilizing best management practices.

4.10 Socioeconomics

4.10.1 Alternative A – Demolish Facility (Proposed Action)

The project activities have not been budgeted and the facilities are chosen from the demolition list based on the funding that is available, so an actual figure of the socioeconomic benefits cannot be estimated. However, project activities would provide a short-term incrementally, positive impact to the economic impact region from increased revenue generation. This increase in revenue is expected to occur as a result of money spent off base for the hiring of a labor force from the region and the expenditure of funds for materials and supplies. However, there would be no social impacts such as those related to relocation of residents or impacts on lifestyle. Since the impact would be positive, no minimization would be necessary.

4.10.2 Alternative B – Renovate Facility [Adaptive Reuse]

Renovating a facility, as described in Chapter 2, could also generate funds similar to Alternative A. Thus, the socioeconomic impact is positive and no minimization is required.

4.10.3 Alternative C – Stabilize/Mothball Facility

Stabilizing/mothballing a facility would also produce funds to a lesser degree than the above Alternatives, still creating a positive impact; no minimization measures are required.

4.10.4 Alternative D – No Action Alternative

If facility demolition does not occur and the building is maintained as is, there would be no increase in revenue to the local economy from this alternative. No minimization measures are required.

4.11 Energy Conservation

4.11.1 Alternative A – Demolish Facility (Proposed Action)

The removal of energy inefficient facilities will increase the overall energy efficiency of Edwards AFB and reduce the base's energy usage; thereby resulting in a positive impact. No minimization measures are required.

4.11.2 Alternative B – Renovate Facility [Adaptive Reuse]

Modern building standards have progressed to the point where materials and design requirements address energy use. Renovation and alterations of older spaces can create

substantial improvements in energy efficiency and related reduction in emissions through energy efficient design standards, thus creating a positive impact. No minimization measures are required.

4.11.3 Alternative C – Stabilize/Mothball Facility

Under Alternative C, some utilities are kept running to help protect the property. Providing adequate interior ventilation is imperative to the integrity of the facility. In most facilities, the need for air conditioning outweighs the winter heating requirements, so most heating systems are shut down in long term mothballing. Maintaining the heating and cooling temperature will still require minimal electricity usage resulting in negligible energy savings. No minimization measures are required.

4.11.4 Alternative D – No Action Alternative

Energy use would continue to occur if energy inefficient buildings remain occupied with only minor/limited repairs. Therefore, Alternative D would have no net change in energy usage.

4.12 *NEPA* Mandated Analysis

4.12.1 Unavoidable Adverse Effects

One unavoidable adverse effect is the taking of a migratory bird during demolition activities on the flightline; however, the taking of any migratory bird on the flightline will be in compliance with the Edwards AFB depredation permit. Another unavoidable adverse effect is the demolition of a historic building. Buildings scheduled for demolition will be evaluated for eligibility to the Historic Register by conducting a survey to determine the cultural value and appropriate mitigation that needs to be applied to reduce potential impacts to less than significant levels.

4.12.2 Relationship of Short-Term Uses and Long-Term Productivity

No resource has been identified that would involve its short-term use overriding the long-term viability of that resource. The majority of the building demolition would occur in developed areas and is not expected to result in a significant long-term adverse impact on the environment.

4.12.3 Irreversible and Irretrievable Commitments of Resources

NEPA requires the environmental impacts of the alternatives including the proposed action to identify irreversible or irretrievable commitments of resources which would be involved in the proposed action alternatives should any be implemented. Irreversible commitments are those that are permanent and cannot be replaced. Irretrievable commitments are those that are absent for a period of time. Most resource commitments for the proposed action are not irreversible or irretrievable, merely short-term use and temporary. Short-term use and temporary commitments are demolition activities that will use water for dust control and electricity and fossil fuels to operate vehicles and equipment. However, the demolition of a building designated as historic or

eligible for listing in the NRHP is considered an irreversible resource that will be lost. Historic buildings with potential cultural value will be surveyed and mitigated as described in this EA.

4.12.4 Cumulative Impacts

Cumulative impacts are expected to be incremental and negligible due to the implementation of minimization and other environmental measures. The proposed action and alternatives are expected to have no cumulative impact when added to other past, present and reasonably foreseeable future actions. One positive cumulative impact from the Proposed Action is reducing the square footage by the 20% reduction in Base size by 2020 as directed by AFMC.

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Title 16, Sections 1531 through 1544, *Endangered Species Act of 1973*;
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Final

APPENDICES

November 2014

APPENDIX A
EDWARDS AFB BUILDING DISPOSAL PLAN

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TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
12 (A4)	FAA Radar Facility (1965)	2016 (Bldgs 12 & 14 total)	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 3-Jun-11	Initial survey completed. Confirmatory survey required.	FY14
14 (A4)	Sanitary Latrine (1965)	2016 (Bldgs 12 & 14 total)	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 14-Mar-11	Initial survey completed. Confirmatory survey required.	FY14
425 (A4)	Sanitary Latrine (1967)	22	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial and confirmatory surveys required.	FY20
602 (A4)	Storage Shed (1955)	800	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
640 (A4)	Storage (1959)	323	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
642 (A4)	Storage (1944)	675	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
643 (A4)	Storage (1944)	675	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
644 (A4)	Storage Spare (1944)	1350	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
649 (A4)	Storage (1943)	100	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
650 (A4)	Storage (1943)	100	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
651 (A4)	Storage (1943)	100	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
652 (A4)	Storage (1943)	100	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
1210 (A5)	Maintenance Hangar (1945)	78485	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
1400 (A5)	Technical Directorate (1954)	67440	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
1412 (A5)	Aircraft Research Engineering (1950)	6640	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
1430 (A5)	Petrol Operations Building (1965)	3840	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
1431 (A5)	AETC Studies and Analysis Squadron (1965)	6109	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
1633 (A5)	Comptroller/Test and Evaluation (1985)	18295	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
1721 (A5)	Ops Tower/Aircraft Dynamic Research Test (1976)	900	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
1866 (A5)	Aircraft Dynamic Research Test (1973)	500	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
2200 (A5)	Gymnasium (1956)	20753	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
2423 (A5)	Dorms (1956)	25018	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
2424 (A5)	Dorms (1958)	25398	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
2425 (A5)	Dorms (1958)	25398	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
2600 (A5)	Public Affairs Office (1955)	19615	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
3497 (A5)	Self-Help Center (1990)	4954	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
3499 (A5)	Readiness Building/ Warehouse (1943)	6611	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
3511 (A5)	Vehicle Maintenance Shop (1954)	3895	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
3517 (A5)	Base Engineer Storage Shed (1962)	6080	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
3524 (A5)	Cemetery (1986)	1 EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial and confirmatory surveys required.	FY20
3738 (A5)	Deployment Office (1964)	3994	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
3762 (A5)	Base Engineer Storage Shed (1979)	800	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
4202 (A6)	Propellant Research Lab Fuel/ Lubricants (1977)	1240	Eligible[2]	Pending	Required/ Completed (CA-163-A)	No	Initial survey completed. Confirmatory survey required.	FY14
4203 (A6)	Propellant Research Lab Fuel/ Lubricants (1945)	428	Eligible[2]	Pending	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14
4209 (A6)	Propellant Research Lab (1958)	1007	Eligible[2]	Pending	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14
4221 (A6)	Administration Office (1959)	3707	Eligible[2]	Pending	Required/ Completed (CA-163-J)	No	Initial survey completed. Confirmatory survey required.	FY15

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
4226 (A6)	Administration Office (1959)	341	Eligible[2]	Pending	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
4227 (A6)	Water Fire Pumping Station (1959)	478	Eligible[2]	Pending	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
4234 (A6)	Supply and Equipment Shed (1963)	2297	Eligible[2]	Pending	Required/ Completed (CA-163-N)	No	Initial survey completed. Confirmatory survey required.	FY15
4235 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1963)	339	Eligible[2]	Pending	Required/ Completed (CA-163-O)	No	Initial survey completed. Confirmatory survey required.	FY15
4236 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1963)	1107	Eligible[2]	Pending	Required/ Completed (CA-163-P)	No	Initial survey completed. Confirmatory survey required.	FY14
4238 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1963)	300	Eligible[2]	Pending	Required/ Completed (CA-163-R)	No	Initial survey completed. Confirmatory survey required.	FY14
4239 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1963)	300	Eligible[2]	Pending	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
4240 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1963)	315	Eligible[2]	Pending	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14
4241 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1963)	416	Eligible[2]	Pending	Required/ Completed (CA-163-S)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4242 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1963)	135	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4243 (A6)	Research Equipment Storage (1963)	1023	Eligible[2]	Pending	Required/ Completed (CA-163-T)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4244 (A6)	Research Equipment Storage (1962)	468	Eligible[2]	Pending	Required/ Completed (CA-163-U& II)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4245 (A6)	Shed Supply and Equipment Base (1963)	558	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
4246 (A6)	Research Equipment Storage (1963)	408	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4247 (A6)	Research Equipment Storage (1963)	408	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4248 (A6)	Research Equipment Storage (1963)	415	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4251 (A6)	Research Equipment Storage (1963)	501	Eligible[2]	Pending	Required/ Completed (CA-163-X)	No	Initial survey completed. Confirmatory survey required.	FY15
4252 (A6)	Research Equipment Storage (1963)	645	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4254 (A6)	Research Equipment Storage (1963)	666	Eligible[2]	Pending	Required/ Not Completed	Completed 24-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4255 (A6)	Research Equipment Storage (1963)	110	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
4256 (A6)	Research Equipment Storage (1963)	110	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4257 (A6)	Research Equipment Storage (1963)	656	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4258 (A6)	Research Equipment Storage (1963)	110	Eligible[2]	Pending	Required/ Completed (CA-163-Y)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4260 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1962)	756	Eligible[2]	Pending	Required/ Completed (CA-163-Z)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4261 (A6)	Research Equipment Storage (1962)	169	Eligible[2]	Pending	Required/ Completed (CA-163-AA)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4264 (A6)	Shed Supply and Equipment Base (1971)	273	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4267 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1965)	390	Eligible[2]	Pending	Required/ Completed (CA-163-BB)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
4268 (A6)	Propulsion Rocket Lab Fuel/Lubricants (1965)	819	Eligible[2]	Pending	Required/ Completed (CA-163-CC)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4269 (A6)	Research Equipment Storage (1965)	569	Eligible[2]	Pending	Required/ Completed (CA-163-DD)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4271 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1964)	1364	Eligible[2]	Pending	Required/ Completed (CA-163-EE)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4272 (A6)	Research Equipment Storage (1965)	418	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4273 (A6)	Electric Propulsion Research Lab (1964)	98	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4274 (A6)	Shed Supply & Equipment Base (1966)	945	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4280 (A6)	Test Stand D, Steam Generator Plant (1972)	1488	Eligible[2]	Pending	Required/ Completed (CA-163-H)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
4281 (A6)	Research Equipment Storage (1976)	129	Eligible[2]	Pending	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4284 (A6)	Propulsion Rocket Lab Fuel/ Lubricants (1978)	676	Eligible[2]	Pending	Required/ Completed (CA-163-FF)	No	Initial survey completed. Confirmatory survey required.	FY15
4288 (A6)	Civil Engineering Science Lab (1984)	968	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
4301 (A6)	Research Equipment Storage (1967)	120	No[1]	Not Required	Not Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
4303 (A6)	Compressed Air Plant (1967)	271	No[1]	Not Required	Not Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15
4494 (A6)	Aircraft Research Test (1967)	3480	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
4515 (A6)	Petrol Operations Building (1967)	156	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY15

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
4951 (A5)	Demineralized Water Plant (1952)	285 Barrel Fluid Capacity	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
4957 (A5)	Covered Storage Shed (1954)	155	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14
7020 (A5)	Family Services (1956)	7782	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14
7981 (A5)	Stables (1943)	1000	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
8105 (A3)	Building Water Supply (1950)	120	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8108 (A3)	Building Water Supply (2008)	192	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial and confirmatory surveys required.	FY16
8110 (A3)	Water Well (1962)	164	Currently being evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
8350 (A1)	Equipment Research Engineering (1986)	14324	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8354 (A1)	Equipment Research Engineering (1953)	9216	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8356 (A1)	Exchange & Café Snack Bar (1953)	8970	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8361 (A1)	Heating Facility (1992)	505	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial and confirmatory surveys required.	FY16
8401 (A1)	Vehicle Operations Administration (1962)	416	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8402 (A1)	Base Engineering Storage Shed (1957)	1040	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
8404 (A1)	Base Engineering Storage Shed (1959)	1206	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8405 (A1)	Base Engineering Maintenance Shop (1957)	1082	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8406 (A1)	Base Engineering Maintenance Shop (1957)	3863	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8407 (A1)	Base Engineering Maintenance Shop (1952)	11200	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8417 (A1)	Equipment Research & Test (1952)	4897	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8419 (A1)	Missile/ Space Research Test (1956)	39127	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
8429 (A1)	Storage Shed (1989)	456	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial and confirmatory surveys required.	FY20
8451 (A1)	Propulsion Research Lab (1957)	59511	Eligible[2]	Required	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8464 (A1)	Special Liquids Storage (1961)	3007	Currently being evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8475 (A1)	Propulsion Research Lab Fuel (1957)	5332	Eligible[3]	Required	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8478 (A1)	Propulsion Engineering Test Stand (1967)	1 EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8483 (A1)	Missile/Space Research Engineering (1988)	3000	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8488 (A1)	Propulsion Research Lab Fuel A (1991)	5147	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
8584 (A1)	Missile Research (1957)	640	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8595 (A1)	Missile Research Test (1960)	22050	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8620 (A1)	Demineralized Water (1956)	43504	Eligible[2]	Required	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8625 (A1)	Water Storage Tank (2002)	3500000gal	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial and confirmatory surveys required.	FY20
8626 (A1)	Science Lab Solar (1960)	4387	Eligible[2]	Required	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8632 (A1)	Propulsion Research Lab (1960)	480	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8634 (A1)	Propulsion Research Lab (1960)	1500	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8641 (A1)	Equipment Research Test (1952)	4143	Eligible[3]	Required	Required/ Completed (CA-236-K)	No	Initial survey completed. Confirmatory survey required.	FY14

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
8645/ Area 1-115 (A1)	Special Liquids Storage (1953)	13400 Barrel Fluid Capacity	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14
8660 (A1)	Electric Power Station (1957)	482	Currently being evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8668 (A1)	Research Equipment Storage/AFRL Area 1-115 (1952)	6777	Eligible[3]	Required	Required/ Completed (CA-236-N)	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
8698 (A1)	Equipment Research Test/AFRL Area 1-115 (1952)	3717	Eligible[3]	Required	Required/ Completed (CA-236-F)	No	Initial survey completed. Confirmatory survey required.	FY14
8702 (A1)	Water Fire Pump Station (1952)	1077	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8752 (A1)	Equipment Research Test (1960)	2092	Eligible[2]	Required	Required/ Not Completed	No	Initial and confirmatory surveys required.	FY20

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
8753 (A1)	Research Equipment Storage (1960)	2000	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8765 (A1)	Equipment Research Test (1956)	9272	Eligible[2]	Required	Required/ Completed (CA-236-R)	No	Initial survey completed. Confirmatory survey required.	FY20
8770 (A1)	Sanitary Sewage Pump Station (1957)	18	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial and confirmatory surveys required.	FY16
8802 (A1)	Water Tank Storage (1964)	1961	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
8804 (A1)	Equipment Research Test (1964)	149	Eligible[3]	Required	Required/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
8832 (A1)	Propulsion Engine Test Stand (1964)	10000	Eligible[3]	Required	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14
8842 (A1)	Equipment Research Test (1964)	149	Eligible[3]	Required	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
8905 (A1)	Equipment Research Test Stand 1-95 (1972)	10675	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
8907 (A1)	Test Stand AFRL/ Equipment Research Test (1957)	544	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14
9020 (A1)	Equipment Research Test/ RDT&E (1963)	2600	Eligible[3]	Required	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9250 (A1)	Missile Space Research Test (1963)	6592	Eligible[3]	Required	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
9520 (A1)	Test Range Complex (1954)	1EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9526 (A3)	Test Range Complex (1954)	1EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
9530 (A2)	Test Range Complex (1954)	1EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9531 (A2)	Test Range Complex (1954)	1EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9532 (A2)	Test Range Complex (1954)	1EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9533 (A2)	Test Range Complex (1954)	1EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9536 (A2)	Test Range Complex (1954)	1EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9593 (A7)	Test Range Complex (1957)	1EA	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9621 (A2)	Industrial Waste Catch Tank (1967)	50000gal	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Continued)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
9630 (A2)	Propulsion Research Lab (1964)	3200	Eligible[2]	Required	Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY20
9638 (A2)	Equipment Research Test (1989)	1456	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial and confirmatory surveys required.	FY20
9641 (A2)	Base Hazard Storage (1972)	360	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9644 (A2)	Supply and Equipment Shed Base (1972)	510	Not Evaluated[4]	Unknown	Unknown/ Not Completed	Completed 23-Mar-12	Initial survey completed. Confirmatory survey required.	FY14
9700 (A2)	Water Fire Pump Station (1966)	535	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
9850 (A2)	Fire Protection Water Storage (1966)	3150	Not Evaluated[4]	Unknown	Unknown/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY16
None (None)[5]	8K Diesel Fuel Tank next to Ramp 10	Not Known	No	Not Required	Not Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14

TABLE A-1: EDWARDS AFB BUILDING DISPOSAL PLAN (Concluded)

Building No. (Figure)	Building Description (Year Built)	Square Feet	Historical/ Eligible to NRHP	MOA With SHPO	HAER Required/ Completed (HAER No.)	McKinney Act (Title V) Complete	ACM/ LBP Surveys Completed	Proposed Year of Demolition
None (None)[5]	MOGAS 8K Tank next to Ramp 10	Not Known	No	Not Required	Not Required/ Not Completed	No	Initial survey completed. Confirmatory survey required.	FY14

Notes: This is an evolving document and only to be used here as a reference. The number of buildings that will be demolished and disposed of in any given year is based on funding availability. Thus, the number of facilities demolished may be considerably less than what is established on this list.

[1] Demolition of this facility qualifies as an undertaking in accordance with 36 CFR §800.16. The undertaking underwent internal Section 106 review, per the National Historic Preservation Act (as amended) and the *Programmatic Agreement between the United States Air Force and the California State Historic Preservation Officer Regarding Implementation of the Air Force Flight Test Center Mission and the Integrated Cultural Resources Management Plan at Edwards Air Force Base*. The Edwards Air Force Base Cultural Resources Management personnel (Base Historic Preservation Officer or qualified personnel under the direction or supervision of the Base Historic Preservation Officer) have determined that the facility is not a historic property nor are cultural resources known to exist within the area of potential effect. However, the Cultural Resources standard operating procedures must be followed in the event of an inadvertent discovery of cultural materials and can be found in the *Integrated Cultural Resources Management Plan for Edwards Air Force Base, California: Fiscal Year 2012 Annual Update*.

[2] Demolition of this facility qualifies as an undertaking in accordance with 36 CFR §800.16. The Edwards Air Force Base Cultural Resources Management personnel (Base Historic Preservation Officer or qualified personnel under the direction or supervision of the Base Historic Preservation Officer) initiated Section 106 review, per the National Historic Preservation Act (as amended) and the *Programmatic Agreement between the United States Air Force and the California State Historic Preservation Officer Regarding Implementation of the Air Force Flight Test Center Mission and the Integrated Cultural Resources Management Plan at Edwards Air Force Base*. Cultural Resources Management personnel determined that the facility is an historic property due to its eligibility to the National Register of Historic Places and the proposed undertaking has the potential to adversely affect the historic property and the historic district to which it contributes. The State Historic Preservation Officer has been notified of the finding of adverse effect and consultation has begun towards reaching an agreement as to acceptable mitigation of the impact to the historic property. The negotiation process may take several months before an acceptable agreement is reached. Once a memorandum of agreement is approved and signed, Section 106 review is complete and the terms of the agreement must be met, with most mitigating measures requiring completion prior to execution of the undertaking. Despite mitigating the known adverse effects of the undertaking, the Cultural Resources standard operating procedures for inadvertent discovery of cultural materials remain in effect and can be found in the *Integrated Cultural Resources Management Plan for Edwards Air Force Base, California: Fiscal Year 2012 Annual Update*.

[3] Demolition of this facility qualifies as an undertaking in accordance with 36 CFR §800.16. The Edwards Air Force Base Cultural Resources Management personnel (Base Historic Preservation Officer or qualified personnel under the direction or supervision of the Base Historic Preservation Officer) initiated Section 106 review, per the National Historic Preservation Act (as amended) and the *Programmatic Agreement between the United States Air Force and the California State Historic Preservation Officer Regarding Implementation of the Air Force Flight Test Center Mission and the Integrated Cultural Resources Management Plan at Edwards Air Force Base* (PA). Cultural Resources Management personnel determined that the facility is an historic property due to its eligibility to the National Register of Historic Places and the proposed undertaking has the potential to adversely affect this historic property and any

historic district to which it may contribute. Per the PA, the State Historic Preservation Officer will be notified of the finding of adverse effect and consultation initiated, in order to reach an agreement as to acceptable mitigation of the impact to the historic property. The negotiation process may take several months to a year, depending on the level and complexity of historic significance and rarity of the historic property. Once a memorandum of agreement is approved and signed, Section 106 review is complete and the terms of the agreement must be met, with most mitigating measures requiring completion prior to execution of the undertaking. Despite mitigating the known adverse effects of the undertaking, the Cultural Resources standard operating procedures for inadvertent discovery of cultural materials remain in effect and can be found in the *Integrated Cultural Resources Management Plan for Edwards Air Force Base, California: Fiscal Year 2012 Annual Update*.

[4] Demolition of this facility qualifies as an undertaking in accordance with 36 CFR §800.16. The Edwards Air Force Base Cultural Resources Management personnel (Base Historic Preservation Officer or qualified personnel under the direction or supervision of the Base Historic Preservation Officer) initiated Section 106 review, per the National Historic Preservation Act (as amended) and the *Programmatic Agreement between the United States Air Force and the California State Historic Preservation Officer Regarding Implementation of the Air Force Flight Test Center Mission and the Integrated Cultural Resources Management Plan at Edwards Air Force Base* (PA). Cultural Resources Management personnel determined that the facility may be an historic property and requires evaluation to determine its eligibility to the National Register of Historic Places (NRHP). Until the facility is evaluated, it must be provided the same level of protection as if eligible to the NRHP. If evaluated and found ineligible to the NRHP, CRM personnel will determine the undertaking to not have the potential for affecting historic properties and the Section 106 review process will be concluded. However, if the facility is found eligible, the proposed undertaking has the potential to adversely affect this historic property and any historic district to which it may contribute. Per the PA, the State Historic Preservation Officer will be notified of the finding of adverse effect and consultation initiated, in order to reach an agreement as to acceptable mitigation of the impact to the historic property. The negotiation process may take several months to a year, depending on the level and complexity of historic significance and rarity of the historic property. Once a memorandum of agreement is approved and signed, Section 106 review is complete and the terms of the agreement must be met, with most mitigating measures requiring completion prior to execution of the undertaking. Despite mitigating the known adverse effects of the undertaking, the Cultural Resources standard operating procedures for inadvertent discovery of cultural materials remain in effect and can be found in the *Integrated Cultural Resources Management Plan for Edwards Air Force Base, California: Fiscal Year 2012 Annual Update*.

[5] The tanks are not buildings and are not shown in a figure; however, the tanks are located along the flightline.

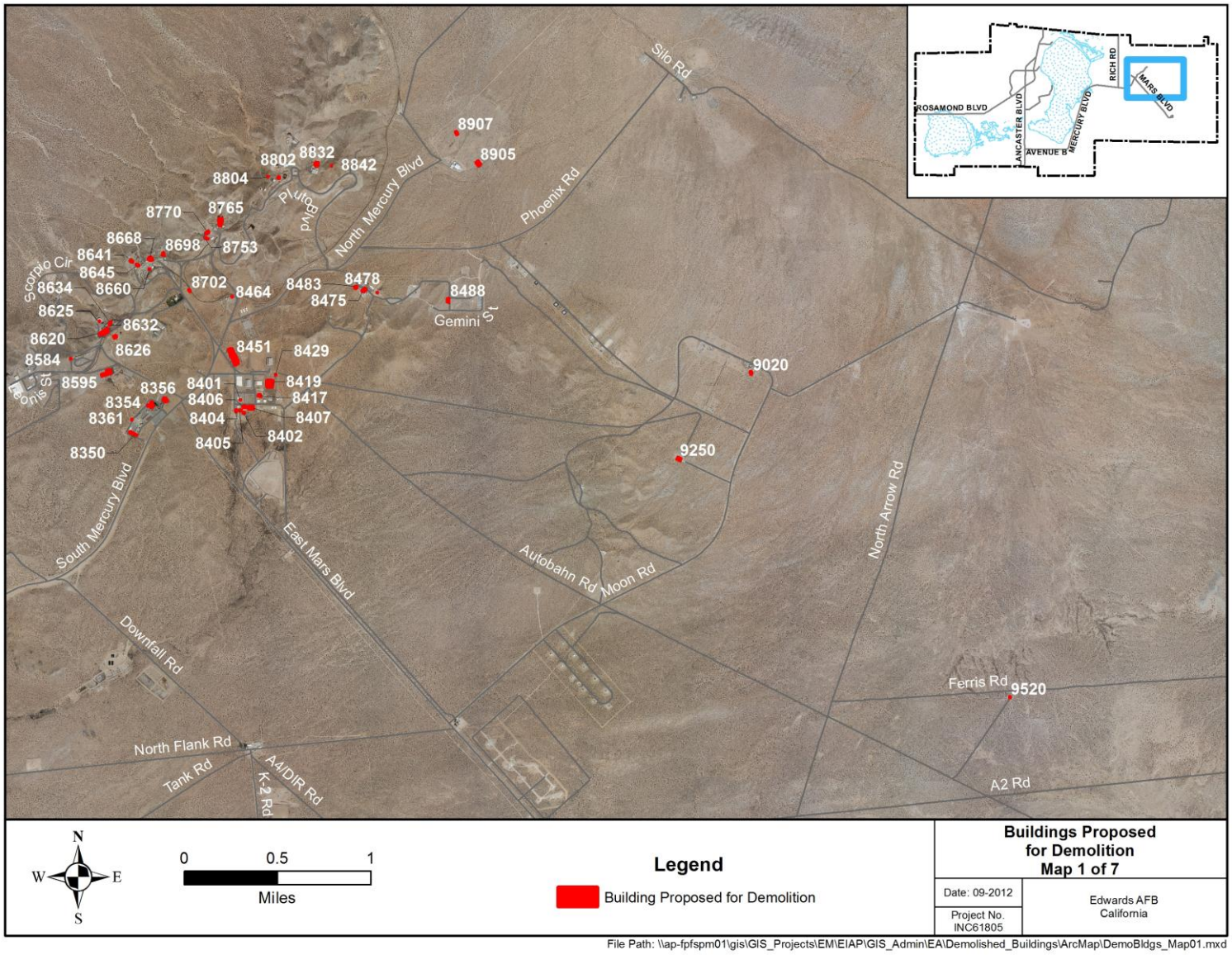

Figure A-1. View of the AFRL Area

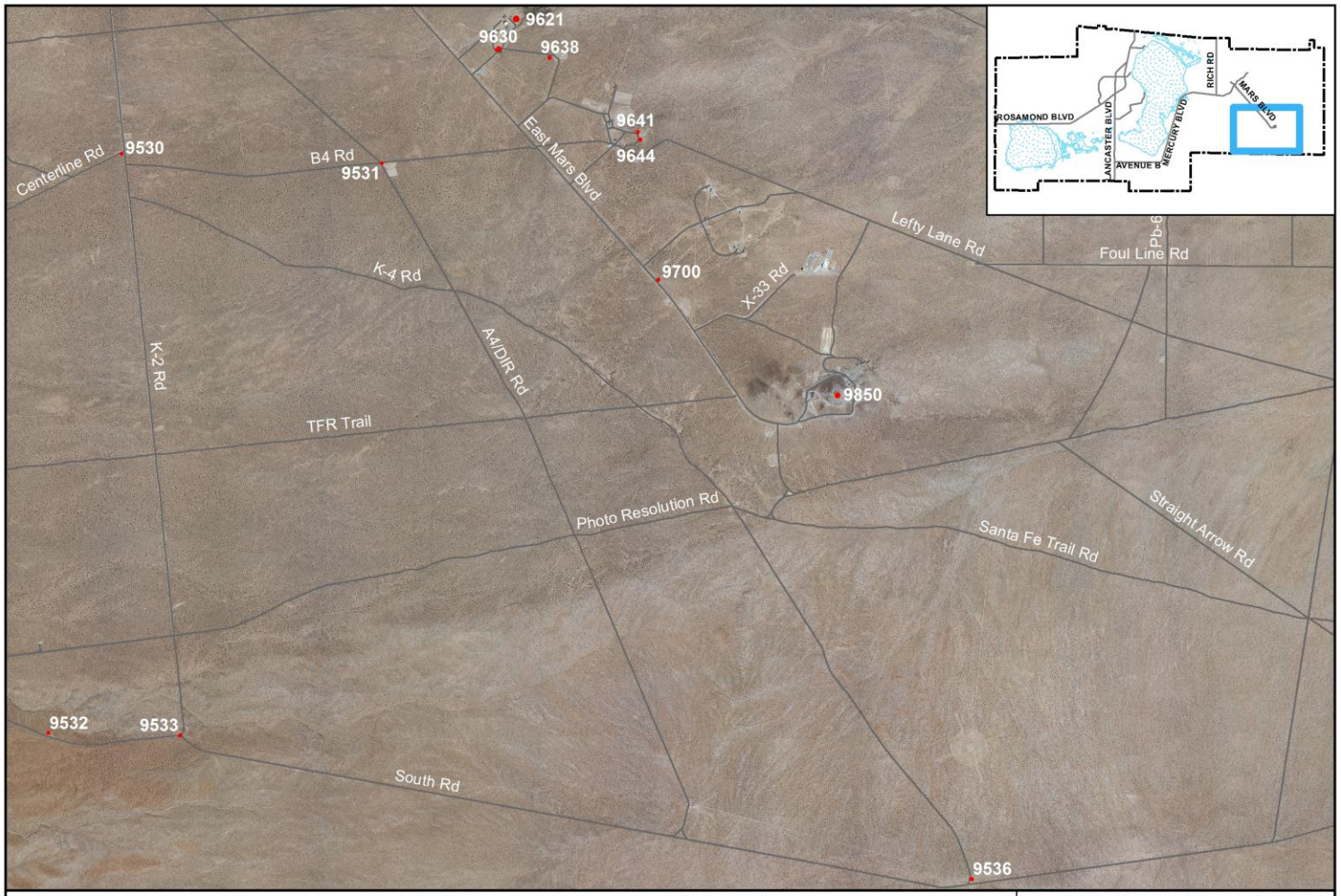

Figure A-2. View of Southern AFRL and PIRA

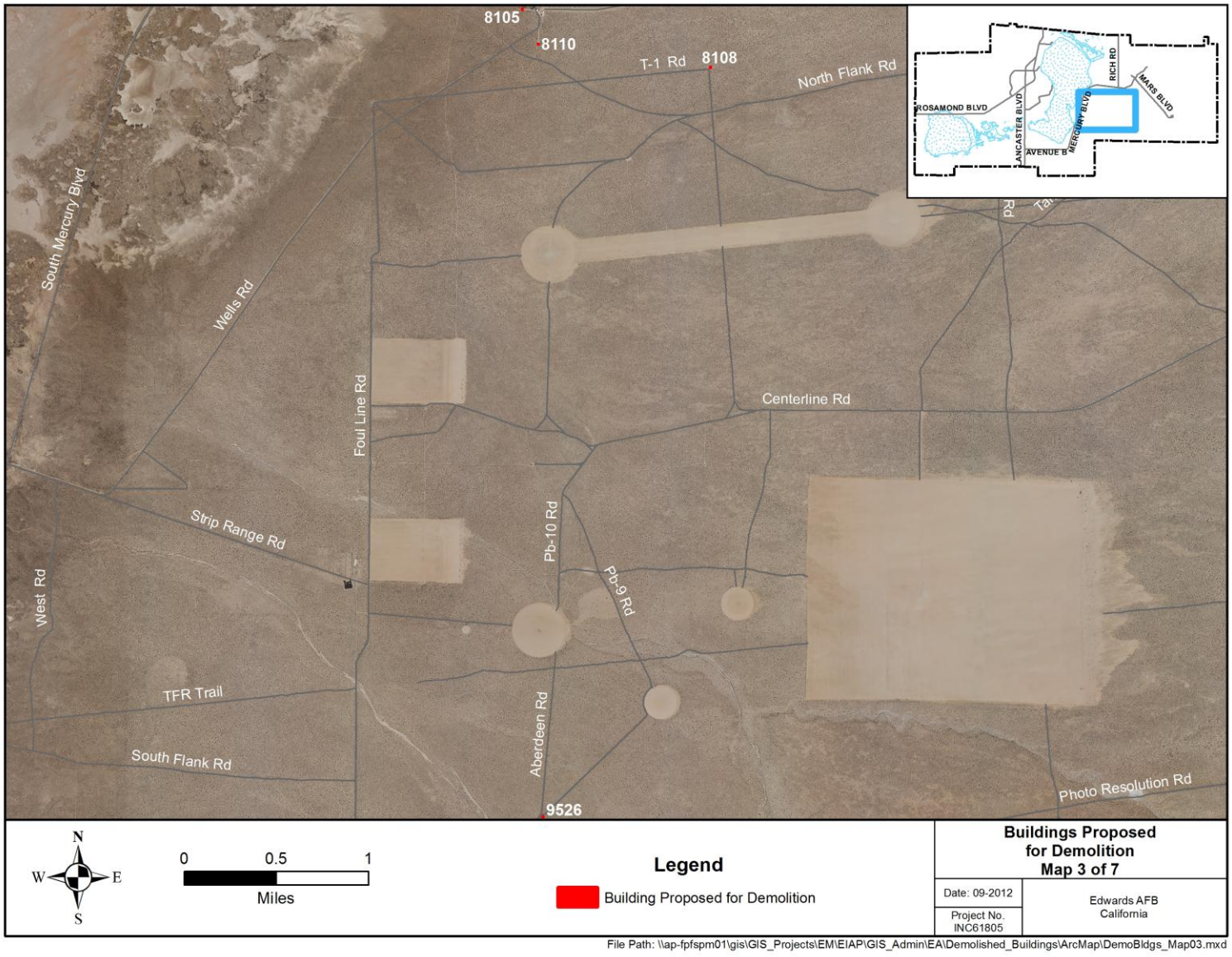

Figure A-3. View of Western PIRA

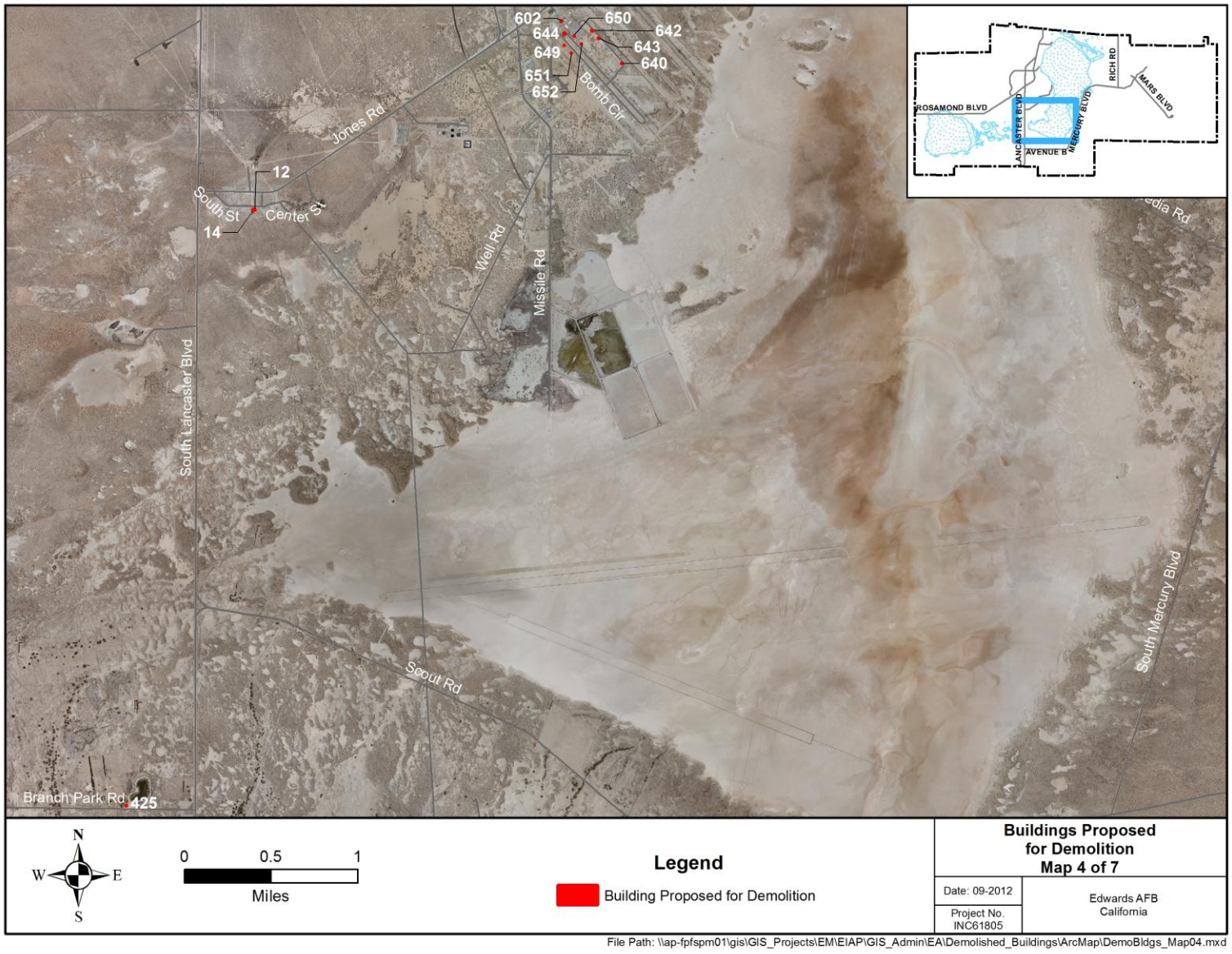

Figure A-4. View of South Base Area

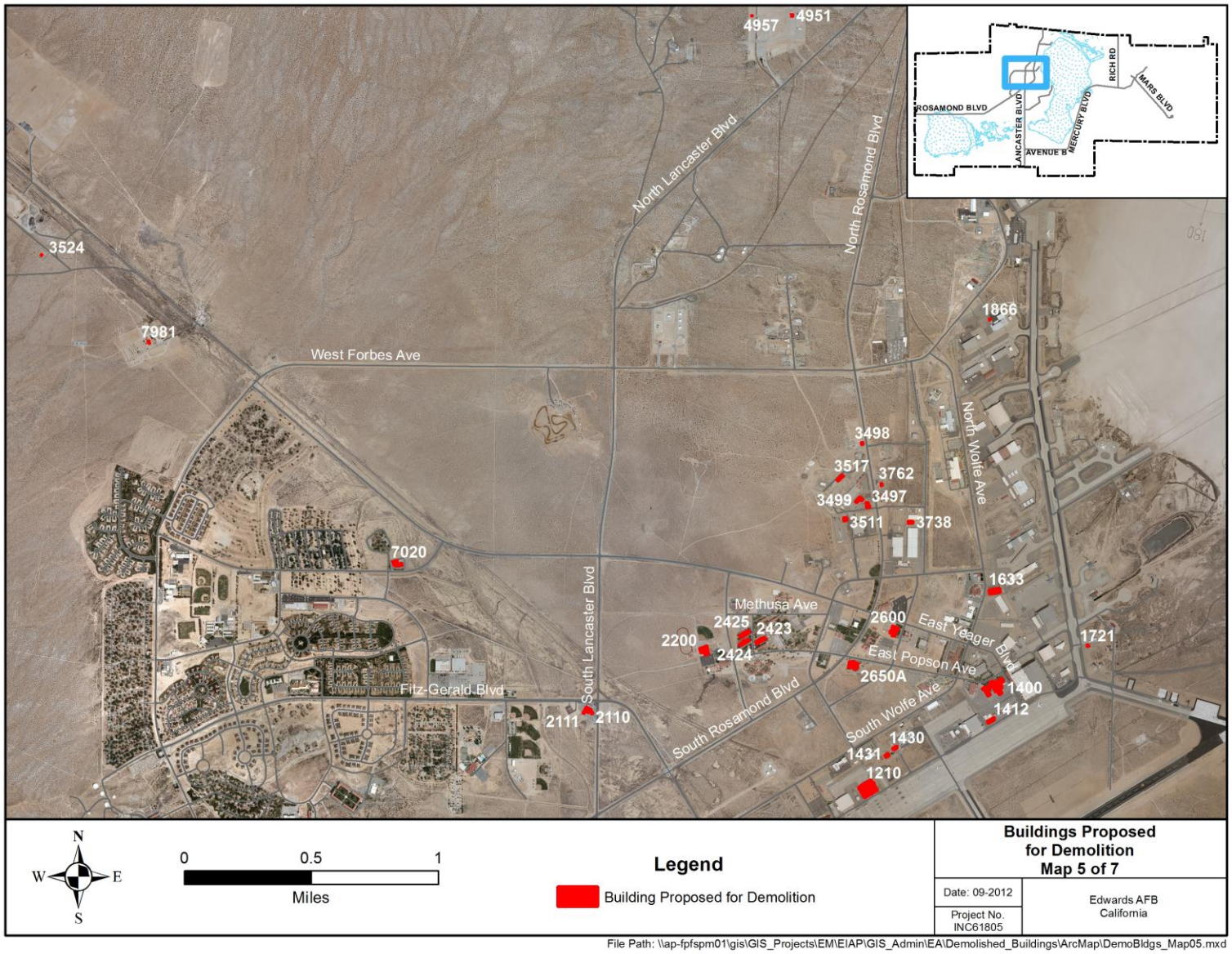

Figure A-5. View of Main Base

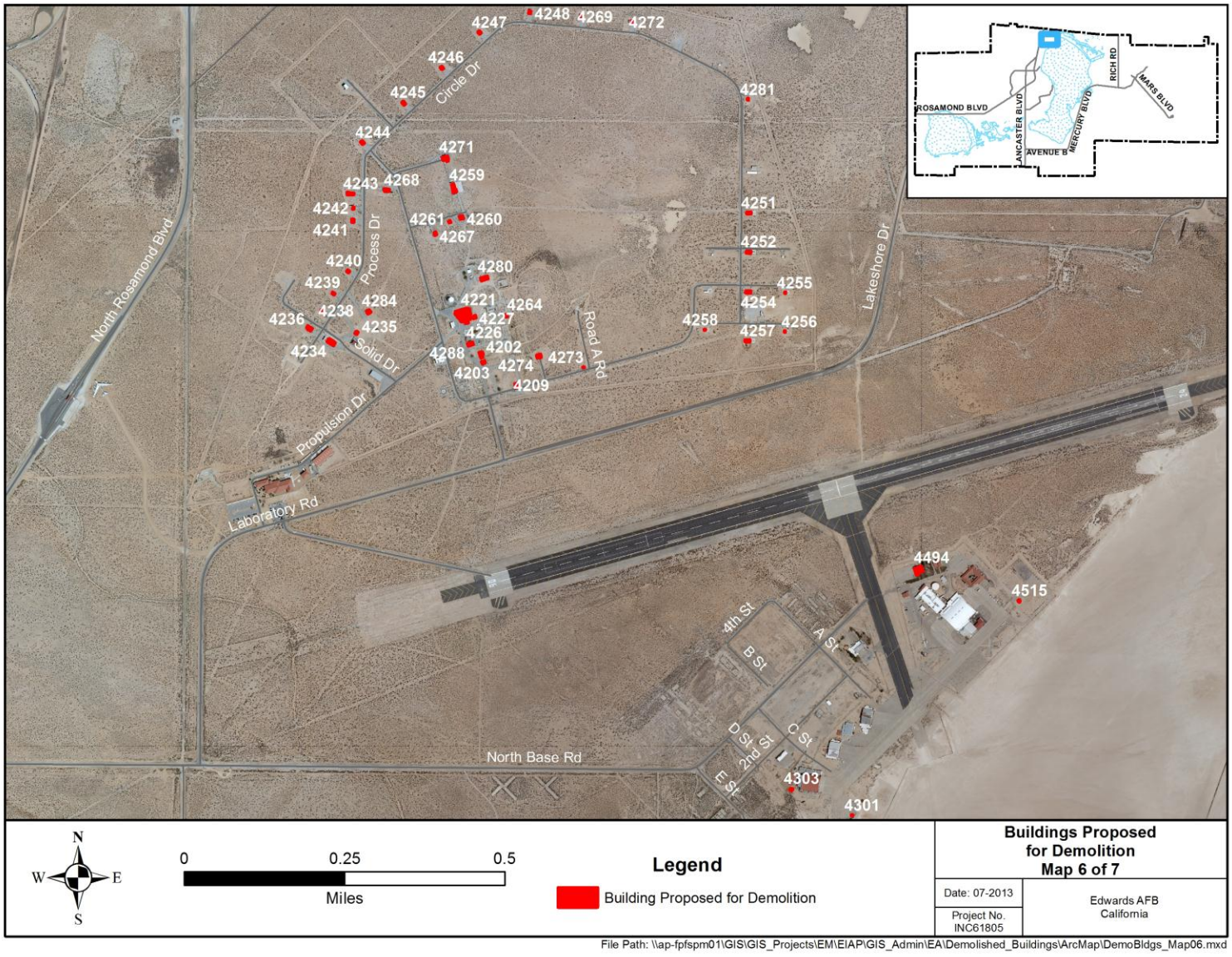

Figure A-6. View of Jet Propulsion Lab Area (North Base)

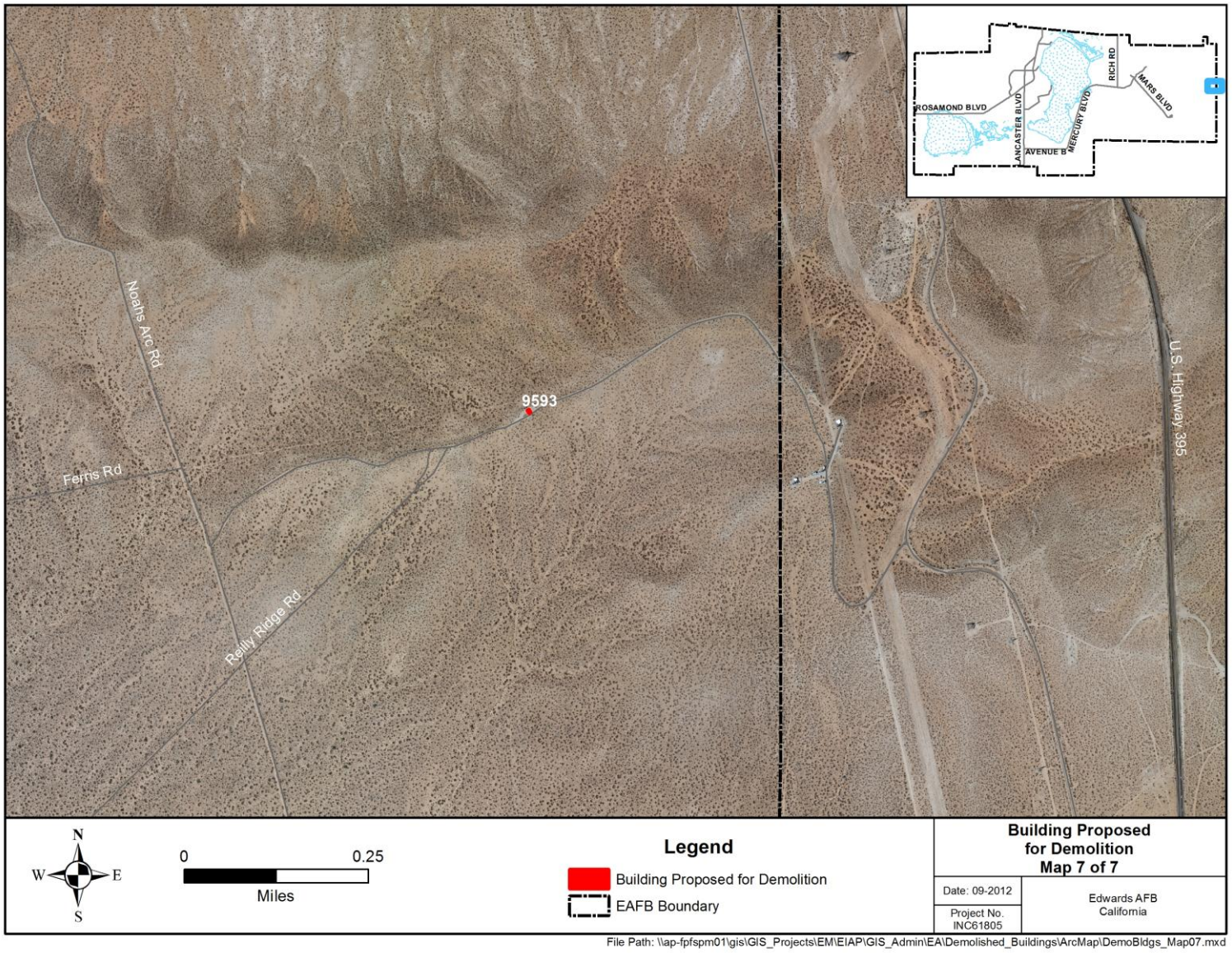

Figure A-7. View of Building 9593 (near Eastern Boundary of Base)

APPENDIX B
CLEAN AIR ACT
CONFORMITY STATEMENT &
AIR EMISSIONS CALCULATIONS

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 412TH TEST WING (AFMC)
EDWARDS AIR FORCE BASE CALIFORNIA

MEMORANDUM FOR RECORD
FROM: 412 CEG/CEVC
12 Laboratory Road, Building 4231
Edwards AFB, CA 93524

SUBJECT: Clean Air Act Conformity Statement for Control No. 95-0088AMEND, *Demolition and Disposal of Base Buildings and Facilities, Edwards AFB, CA*

1. The following finding is made on the need for a conformity statement under the *Clean Air Act* with respect to the Proposed Action.

a. The Proposed Action is located in the following air quality management districts: Eastern Kern Air Pollution Control District (EKAPCD), Mojave Desert Air Quality Management District (MDAQMD), and Antelope Valley Air Quality Management District (AVAQMD).

b. Under regulations promulgated pursuant to the *Clean Air Act*, Title 42 U.S.C. Part 7506 (c), the portion of the Proposed Action regulated by the EKAPCD is located in a Marginal Nonattainment area for ozone. The *de minimis* level set for EKAPCD for emissions of ozone precursor pollutants ([VOCs or oxides of nitrogen [NO_x]), in accordance with Title 40 CFR Part 51.853/93.153 (b)(1) and EKAPCD Rule 210.7 is up to 100 tons per pollutant (VOCs or NO_x) per year per action. The portion of the Proposed Action regulated by the MDAQMD and AVAQMD is located in a Serious Nonattainment level for ozone. The *de minimis* level set for MDAQMD and AVAQMD for emissions of VOCs or NO_x, IAW 40 CFR 51.853/93.153 (b)(1), MDAQMD Rule 2002, and AVAQMD Regulation XIII, is up to 25 tons per ozone precursor pollutant per year per action.

c. It has been determined that the relevant air emissions for this action are 9.33 tons of NO_x and 1.09 tons of VOCs during 2020 (year in which the most demolition activities occur, in terms of total square footage). The direct and indirect emissions, when totaled, are less than the *de minimis* amounts specified in 40 CFR 51.853/93.153(b)(1); therefore, a conformity determination is not required.

2. Should you have any questions with respect to this finding, please direct them to Mr. John Vidic at (661) 277-1457.

MARC G. MINNECI, NH-III
Acting Chief, Compliance Branch
Environmental Management Division

AIR EMISSION CALCULATIONS for DEMOLITION ACTIVITIES

Scope of work: Demolish Existing Facilities, Load Debris into haul trucks and transport debris off-Base.

Emissions from Vehicles

Year	Sq. Ft / year	ROG (tons/yr)	CO (tons/yr)	NOx (tons/yr)	SOx (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	CO2 (tons/yr)
2014	159,936	0.22	1.07	1.72	0.002	0.08	0.03	199.25
2015	105,513	0.14	0.71	1.14	0.001	0.05	0.02	131.45
2016	58,858	0.08	0.39	0.63	0.001	0.03	0.01	73.33
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	785,516	1.07	5.25	8.46	0.01	0.40	0.15	978.60
Total	**1,109,823**	**1.51**	**7.42**	**11.96**	**0.01**	**0.56**	**0.21**	**1382.62**

Emissions from Offsite Waste Disposal

Year	Sq. Ft / year	ROG (tons/yr)	CO (tons/yr)	NOx (tons/yr)	SOx (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	CO2 (tons/yr)
2014	0.00	0.02	0.18	0.0002	0.01	0.004	24.21	0.00
2015	0.00	0.01	0.12	0.0002	0.003	0.003	15.97	0.00
2016	0.00	0.01	0.07	0.0001	0.002	0.002	8.91	0.00
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0.02	0.10	0.87	0.001	0.03	0.02	118.92	0.02
Total	**0.03**	**0.14**	**1.23**	**0.002**	**0.04**	**0.03**	**168.01**	**0.03**

Emissions from Fugitives

		Emissions from Fugitives - Unmitigated			Emissions from Fugitives - Mitigated		
Year	Sq. Ft / year	PM10 (tons/yr)	PM2.5 (tons/yr)	PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	PM (tons/yr)
2014	159,936	6.07	1.99	11.68	5.23	1.70	10.05
2015	105,513	4.01	1.31	7.70	3.45	1.12	6.63
2016	58,858	2.23	0.73	4.30	1.92	0.62	3.70
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0
2020	785,516	29.82	9.79	57.34	25.67	8.33	49.37
Total	**1,109,823**	**42.13**	**13.83**	**81.02**	**36.27**	**11.77**	**69.75**

Total Emissions-Unmitigated

Year	Sq. Ft / year	ROG (tons/yr)	CO (tons/yr)	NOx (tons/yr)	SOx (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	CO2 (tons/yr)
2014	159,936	0.22	1.09	1.90	0.002	6.16	2.03	223.46
2015	105,513	0.15	0.72	1.25	0.001	4.06	1.34	147.42
2016	58,858	0.08	0.40	0.70	0.001	2.27	0.75	82.24
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	785,516	1.09	5.35	9.33	0.01	30.24	9.96	1097.52
Total	**1,109,823**	**1.54**	**7.56**	**13.18**	**0.02**	**42.73**	**14.07**	**1550.63**

Buildings Planned to be Demolished

Year	Number of Buildings to be Demolished	Total Square Footage to be Demolished	NOx (tons/yr)	VOC (tons/yr)	PM10* (tons/yr)	PM2.5* (tons/yr)	CO2 (tons/yr)
FY14	61	159,936	2	0.2	6	2	223
FY15	20	105,513	1	0.1	4	1	147
FY16	19	58,858	1	0.1	2	1	82
FY17	0	0	-	-	-	-	-
FY18	0	0	-	-	-	-	-
FY19	0	0	-	-	-	-	-
FY20	45	785,516	9	1	30	10	1,098
Conformity Applicability Threshold for EKAPCD			100	100	100	100	25000
Conformity Applicability Threshold for MDAQMD			25	25	15	15	10000
Conformity Applicability Threshold for AVAQMD			25	25	15	15	10000

*PM Emissions from construction-related activities are not required to be included conformity analyses if such emissions are considered temporary as defined in 40 CFR 93.123(c)(5)

Equipment Used for Demolition Activities: Example Building Debris from EA (Section 4.5.1) for 13,407 Sqft demolition of BLDG 4401

Equipment	Quantity	Hrs/Day	Duration (Days)	Tons/Sqft	Operating Hrs / Sqft*	HP	HP-hr/Sqft
Rubber Tired Dozers	2	8	60	0.57	0.00223	500	2.234921
Tractor/Loader/ Backhoe	4	8	60	0.26	0.00051	120	0.24381
Excavator	2	8	60	0.57	0.00223	175	0.782222
Total	8	24	180	1.4	0.00497778	795	3.260952

*Operating hrs/sqft from Fugitive PM tab

Assumptions:

Operating Hours and Tons per SQFT from Fugitve PM emissions calc tab

Tractor/Loader/Backhoe operates at the same rate as scrapers, Dozers and Excavator operates at same rate

Assume 100% load factor

Emission Factors for Demolition Equipment

		Emission Factors* (lb/hp-hr)						
Equipment	**HP-hr/Sqft**	**ROG**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**	**CO2**
Rubber Tired Dozers	2.234920635	0.0009	0.0037	0.0071	0.000007	0.0003	0.0001	0.739
Tractor/Loader/Backhoe	0.243809524	0.0008	0.0047	0.0057	0.000009	0.0004	0.0002	0.689
Excavator	0.782222222	0.0007	0.0042	0.0053	0.000009	0.0003	0.0001	0.714

*EF from CARB EF Database EMFAC2011, (http://www.arb.ca.gov/emfac/) Mojave Desert Air Basin, Annual Season, Aggregated fleet & Speed, 2014 data

EFs include emissions from start, running and idling exhaust. In addition, the PM10 emission factors include tire and brake wear.

Worker Trip Emission Estimations

	Emission Factors* (lb/mi)						
Equipment	**ROG**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**	**CO2**
Gasoline Passenger Car	0.000214	0.004153	0.000401	0.000008	0.000103	0.000043	0.756965

*EF from CARB EF Database EMFAC2011, (http://www.arb.ca.gov/emfac/) Mojave Desert Air Basin, Annual Season, Aggregated fleet & Speed, gasoline passenger 2014 data

EFs include emissions from start, running and idling exhaust. In addition, the PM10 emission factors include tire and brake wear.

Worker Trip Emissions Assumptions:

Demolition worker commute trips assume that the number of workers equals 125% of the total pieces of construction equipment selected---- URBEMIS2007

Average commute distance is 200 miles (round trip to LA), with a 0.0007 quantity per sqft

Mileage per sqft= 0.1491758

Vehicle Emission Estimations

Vehicle Emission Factors (lb/sqft)							
Equipment	**ROG**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**	**CO2**
Rubber Tired Dozers	0.001915	0.008300	0.015964	0.000015	0.000660	0.000251	1.652059
Tractor/Loader/ Backhoe	0.000206	0.001138	0.001381	0.000002	0.000110	0.000042	0.168006
Excavator	0.000565	0.003315	0.004144	0.000007	0.000227	0.000086	0.558620
Gasoline Passenger Car	0.000032	0.000620	0.000060	0.000001	0.000015	0.000006	0.112921
Total	**0.002718**	**0.013372**	**0.021549**	**0.000025**	**0.001012**	**0.000385**	**2.491607**

Total Emissions for Equipment and Worker Trips

Year	Sq. Ft / year	ROG (tons/yr)	CO (tons/yr)	NOx (tons/yr)	SOx (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	CO2 (tons/yr)
FY14	159,936	0.217	1.069	1.723	0.0020	0.081	0.031	199.249
FY15	105,513	0.143	0.705	1.137	0.0013	0.053	0.020	131.448
FY16	58,858	0.080	0.394	0.634	0.0007	0.030	0.011	73.325
FY17	0	-	-	-	-	-	-	-
FY18	0	-	-	-	-	-	-	-
FY19	0	-	-	-	-	-	-	-
FY20	785,516	1.068	5.252	8.464	0.0098	0.397	0.151	978.598
Total	**1,109,823**	**1.51**	**7.42**	**11.96**	**0.014**	**0.56**	**0.21**	**1,382.62**

EPA adopted CARB EMFAC2011 model on 11/2013 for conformity analysis. Emissions are valid for both EPA and CARB analysis.

Building Debris Estimations

Example Building Debris from EA (Section 4.5.1) for 13,407 Sqft demolition of BLDG 4401

Building Dimensions	13407	SQ. FT	20	64	350	**Truck Load Capacity* (CY)**		
	Tons	**% Stream**	**% Project**	**Tons/Sqft**	**Tons/CY**	**CY**	**Number Trucks**	**Number Trucks per 1000 sqft.**
Estimated Total Debris	999		100.0%	**0.0745**	0.20	4966	14	1.0582
Hazardous Disposal	**33.37**	**100%**	**3.3%**	**0.0013**	0.38309	87	4	0.3249
Asbestos Roofing Material	12.96	38.8%	1.3%	0.0010	0.3655	35	2	0.1322
Asbestos Floor Tile& Mastic	4.86	14.6%	0.5%	0.0004	0.43	11	1	0.0422
Construction Debris Building	12.03	36.1%	1.2%	-	-	-	-	-
Concrete Building	3.52	10.5%	0.4%	-	-	-	-	-
Non-Hazardous Disposal	**965.8**	**100.0%**	**96.7%**	**0.0732**	0.28200	3425	10	0.7298
Construction Debris	201.5	20.9%	20.2%	0.0159	0.15	1343	4	0.2863
Concrete Recycle	756	78.3%	75.7%	0.0567	0.9	840	2	0.1790
Metal Recycle	8.3	0.9%	0.8%	0.0006	0.453	18	1	0.0683

*Cal Recycle C&D Debris Resources http://www.calrecycle.ca.gov/SWFAcilities/CDI/Tools/Calculations.htm updated density from CIWMB 2006

** Typical dump truck capacity 20 CY, Tandem capacity 64 CY, 10-Wheeler capacity 350 CY.

Assumptions:

Assume use larger truck for debris categories with most debris and assume full loads.

Total project square footage was used to estimate debris amounts

Project debris composition based on example project from EA of 13,407 sqft (Section 4.5.1)

Disposal Trips for Each 1,000sqft

Destination	Trips per 1,000 sqft	Mileage (round trip)	Mileage per 1000 sqft
Kettleman City - Haz Waste[1]	0.1744	326	56.85
Lancaster - C&D Waste[2]	0.2863	50	14.31
Rosemond - Concrete[2]	0.1790	32	5.73
Palmdale - Metal Recycling[1]	0.0683	80	5.47

1 - Vehicle category: T7 single construction - Heavy-Heavy Duty Diesel Single Unit Construction Truck for 20CY dump truck

2 - Vehicle category: T6 tractor construction - Heavy-Heavy Duty Diesel Construction Tractor Trailer for 350CY dump truck

Emission Factors for Disposal Trips for Each 1,000sqft

	Emission Factors* (lb/mi)						
Destination	**ROG**	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**	**CO2**
Kettleman City - Haz Waste[1]	0.000687	0.002738	0.027437	0.000035	0.000755	0.000574	3.672648
Lancaster - C&D Waste[2]	0.000919	0.004237	0.024976	0.000035	0.000954	0.000757	3.687450
Rosemond - Concrete[2]	0.000919	0.004237	0.024976	0.000035	0.000954	0.000757	3.687450

*EF from CARB EF Database EMFAC, (http://www.arb.ca.gov/emfac/) Mojave Desert Air Basin, Annual Season, Aggregated fleet & Speed, 2014 data

1 - Vehicle category: T7 single construction - Heavy-Heavy Duty Diesel Single Unit Construction Truck for 20CY dump truck

2 - Vehicle category: T6 tractor construction - Heavy-Heavy Duty Diesel Construction Tractor Trailer for 350CY dump truck

EFs include emissions from start, running and idling exhaust. In addition, the PM10 emission factors include tire and brake wear.

Emission Factors (lb/sqft)

Destination	ROG	CO	NOx	SOx	PM10	PM2.5	CO2
Kettleman City - Haz Waste[1]	0.000039	0.000156	0.001560	0.000002	0.000043	0.000033	0.208793
Lancaster - C&D Waste[2]	0.000013	0.000061	0.000358	0.000001	0.000014	0.000011	0.052781
Rosemond - Concrete[2]	0.000005	0.000024	0.000143	0.000000	0.000005	0.000004	0.021123
Palmdale - Metal Recycling[1]	0.000004	0.000015	0.000150	0.000000	0.000004	0.000003	0.020076

1 - Vehicle category: T7 single construction - Heavy-Heavy Duty Diesel Single Unit Construction Truck for 20CY dump truck

2 - Vehicle category: T6 tractor construction - Heavy-Heavy Duty Diesel Construction Tractor Trailer for 350CY dump truck

Total Emissions from Transportation and Waste

Year	Sq. Ft / year	ROG (tons/yr)	CO (tons/yr)	NOx (tons/yr)	SOx (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	CO2 (tons/yr)
2014	159,936	0.005	0.020	0.177	0.0002	0.005	0.004	24.212
2015	105,513	0.003	0.013	0.117	0.0002	0.003	0.003	15.973
2016	58,858	0.002	0.008	0.065	0.0001	0.002	0.002	8.910
2017	0	-	-	-	-	-	-	-
2018	0	-	-	-	-	-	-	-
2019	0	-	-	-	-	-	-	-
2020	785,516	0.024	0.100	0.868	0.001	0.026	0.020	118.917
Total	**1,109,823**	**0.03**	**0.14**	**1.23**	**0.002**	**0.04**	**0.03**	**168.01**

EPA adopted CARB EMFAC2011 model on 11/2013 for conformity analysis. Emissions are valid for both EPA and CARB analysis.